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## ADDRESSES.

### THE ADDRESS OF THE PRESIDENT.*

Delivered at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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*Fellow Members of the American Medical Association:*

I desire at the outset of my presidential address to express to you my high appreciation of the honor conferred upon me and my thanks for the same. I esteem it a special honor to have been elected president of the American Medical Association at the semi-centennial meeting in Philadelphia. The large attendance, the hospitable reception accorded us by the citizens of Philadelphia, the admirable arrangements for our meetings, the high professional and scientific standard of the general addresses and of the papers read at the sectional meetings, all contributed to make this a memorable meeting, and it will be a matter of just pride in the future for those members who are able to say, "I was present at the semi-centennial meeting of the American Medical Association in Philadelphia in 1897." Possibly some of our younger members may have the privilege of attending the centennial meeting of the Association in 1947 and of giving testimony with reference to the success of the semi-centennial meeting and the status of scientific medicine at the close of the nineteenth century. If so, they will not fail to mention the fact that the founder of the Association, Dr. Nelson S. Davis, was present on this occasion and that the distinguished American surgeon, Nicholas Senn, was the presiding officer.

I congratulate you upon the favorable prospects for a pleasant and profitable meeting of the Association in this beautiful and hospitable city of Denver. I have had no doubts as to the success of the meeting over which I am called upon to preside since I heard the decision as to the place selected for our annual convocation. The invigorating air of this elevated region, the grand mountain scenery, and the inducements to activity offered by a State rich in mineral resources, all are conducive to physical and mental energy and to a broad-minded liberality, the results of which will no doubt be apparent in the arrangements made for the scientific work of the Association and for the entertainment of its members.

Our Association, as the representative body of American physicians, will no doubt continue to increase in membership and in influence. The day is perhaps not far distant when no reputable physician will be willing to confess that he does not belong to the American Medical Association and when no progressive physician can afford to do without our JOURNAL. And in order that every physician of good professional standing may enjoy the privileges of membership I think it desirable that "Permanent Members" should be elected, upon application, without reference to their membership in "State, County or District Medical Societies" when they present satisfactory evidence that they are graduates in medicine of reputable standing in the profession and are willing to subscribe to the code of ethics of the American Medical Association. In other words, I would not exclude a reputable physician from membership because the State, County or District Medical Society to which he belongs declines to adopt our code of ethics. If he, individually, is willing to be governed by the regulations made by this representative body I see no good reason for rejecting his application for membership.

A liberal and progressive spirit will do much toward promoting the growth and influence of the Association. The medical profession in this country has suffered more from the ignorance of some of its members who hold diplomas from regular schools of medicine than from the attacks of those whom we call irregulars or quacks. Scientific medicine, being founded upon demonstrable truths, must in the end maintain itself and secure the confidence of the people. But when the results of scientific research are rejected through ignorance of the experimental data upon which they are founded, and the layman hears contradictory professional opinions about matters which the well informed knows to be definitely settled, he may be excused for not differentiating so sharply as we are disposed to do between regulars and irregulars. To maintain our standing in the estimation of the educated classes we must not rely upon our diplomas or upon our membership in medical societies, but must show ourselves superior in knowledge and in professional resources to the ignorant pretender or to the graduate of a medical school which is bound in its teachings by an untenable creed, adopted before the light of science had taught physicians to reject theories and the dicta of authorities in favor of truths demonstrated by modern methods of research. There are those who still speak of us as "old school physicians," ignorant apparently of the fact that scientific medicine is to a great extent of very recent origin, and that all of the great discoveries in relation to the etiology, prevention and specific treatment of infectious diseases, and nearly all the improved methods and instrumental appliances for clinical diagnosis and surgical treatment have had their origin within the ranks of the regular profession. While, therefore, we still have with us some "old school doctors," who have fallen behind the procession, the profession as a whole has been moving forward with incredible activity upon the substantial basis of scientific research, and if we are to be characterized by any distinctive name, the only one applicable would be "*the new school of scientific medicine.*"

* Owing to the arduous duties of his office Surgeon-General Sternberg was not present at the Denver meeting. His address was read by Dr. Col. Woodhull, United States Army.

Not that our science is complete, for we have still many things to learn and many problems which have thus far resisted all efforts at their solution; but we have learned how to attack these problems and no one any longer expects that they can be solved by the exercise of the reasoning powers and the facile use of the pen. The old saying has it that "the pen is mightier than the sword." This is no doubt true in politics, but in science the pen is a feeble instrument compared with the test-tube, the microscope, the chemical balance, etc. Nevertheless, I am about to advise well-informed physicians to make greater use of the pen, not for the elucidation of those problems which remain to be solved, but for the purpose of calling the attention of the non-medical portion of the community to the recent achievements of scientific medicine. It is a remarkable and lamentable fact that many persons belonging to the so-called educated classes are grossly ignorant as regards the present status of medical science. They not only speak of us as "old school doctors," but they entrust their lives and those of their children to pseudo-scientists who, taking advantage of popular interest in the great discoveries of the day, make extravagant claims as to the curative power of electricity, the X-ray, oxygen, ozone, or some wonderful microbe destroyer. Or, ignoring the exact knowledge which has been gained by experience and pains-taking researches with reference to the etiology of various diseases and the curative action of approved therapeutic agents, they accept the vagaries of the osteopath and the christian scientist as representing the latest development of scientific progress in medicine. The false assertions and claims of ignorant enthusiasts and conscienceless vampires, as a rule, pass unchallenged. Not only are they able to impose upon a gullible public through their published advertisements, but articles written by them or for them appear in the columns of reputable newspapers. The ever-present and irresponsible newspaper reporter espouses their cause through ignorance or for gain and their wonderful cures are related and copied from one paper to another without any competent critic raising his voice to show the fallacy of the claims. Again, positive denials of the value of the well-established achievements of scientific medicine are often made, unfortunately too often, by men who are authorized to attach the letters M. D. to their signatures. This leads to the frequent repetition of the old question as to "who shall decide when doctors disagree?" No matter how well a fact may be established by repeated experiment or by the common experience of the profession, some doctor may be found who, through ignorance or that obliquity of mental vision which characterizes the crank, will deny its truth. Thus, there are doctors who deny the value of vaccination, others who fail to recognize any value in results obtained by experiments on the lower animals, others who deny the etiologic rôle of well-known pathogenic bacteria, etc. As a result the anti-vaccination and anti-vivisection societies are able to fortify their position by quoting the opinions of medical men of more or less repute. But opinions are of no value when opposed to evidence, and it seems to me that those familiar with the evidence would do well to give to the public concise and comprehensible statements, suitable for publication in newspapers and popular magazines, setting forth the facts and the evidence upon which these facts are accepted by well-informed physicians. But in doing so, great care should be taken not to make any assertions that are not based upon reliable data. A distinguished surgeon who has taken an active part in opposing the anti-vivisection bill introduced into the Senate of the United States through the influence of the Washington Humane Society, recently wrote me as follows:

I have been corresponding with Welch, Burrell, Bowditch and others in reference to the formation of a society for the distribution of literature and fostering the sentiment in favor of scientific research. I would be glad to have your own views in the matter. It has occurred to me that at the meeting of the various special societies and especially at the AMERICAN MEDICAL ASSOCIATION this spring it might be well to introduce resolutions indorsing the formation of such a society.

In reply to this letter I said:

With reference to your suggestion as to the formation of a society for the objects mentioned, I think the idea is a good one and shall be glad to aid you in carrying it out. I think we have given those who are opposed to scientific medicine too much rope in allowing them to publish all sorts of misleading statements without our taking the trouble to contradict them or to educate the people. If we had an association organized for the purpose of answering such false statements as have circulation in the newspapers much good might result. When this is left to individuals generally no action is taken, on account, perhaps, of the disinclination on the part of competent physicians to have their names attached to articles appearing in the newspapers lest they may be thought by their professional brethren to be seeking notoriety and be accused of unethical conduct. Certainly it seems to me that the profession has a duty to perform in this direction and I hope you will take some steps to bring about such an organization as you suggest.

In carrying out this plan care should be taken not to engage in controversy with individuals whose misleading statements we desire to correct, but rather to have a systematic plan for placing the truth before the public. For example, an article on the medical uses of electricity might show its limitations and call attention to the fact that it has no germicidal effect when currents are used which are not destructive of the living tissues. Reference might then be made to the unscientific nature of the evidence offered in favor of the curative action of electric belts, electric rings and the electropoise, which is described as "a little instrument which enables the system to take on oxygen freely from the atmosphere." I venture to quote from a paper entitled "Science and Pseudo-Science in Medicine," which I read before the Anthropological Society of Washington in 1896, in further illustration of the kind of missionary work in the education of the public which I think such an organization as has been proposed should undertake. Referring to the electropoise, I say:

The *modus operandi* of this wonderful instrument is more fully explained in the following published certificate (advertisement in *McClure's Magazine*):

One might conclude, from its name, that it was an electric battery. But it does not generate electricity and is in no sense a battery, belt, sole, or anything kindred to them. It consists of a small cylinder called a "polarizer," which is used in connection with the patient's body by means of a common electric cord. This polarizer causes oxygen from the atmosphere to be absorbed by the entire surface of the body with great rapidity, the strength of the absorption being regulated according to the ability of the patient to receive.

. . . . . .

After a year's use we have this to say in its favor: 1. We have taken no medicine for the year. 2. All traces of la grippe and an old sunstroke trouble have disappeared and no symptoms of either remain. Once or twice, from severe overwork, we have found it necessary to hold up for a few days, but in no time for fifteen years have we been better than during the past year. Much of this we attribute to the use of the "Electropoise."

This notice of the "Electropoise" is without solicitation and entirely gratuitous. We do it for the good of the afflicted. We have no personal interest in it and are not paid for what

we say in its favor. Persons desiring further information can address the agent.—Rev. Wm. McDonald in *Boston Christian Witness*.

"We would suggest to the Rev. Wm. McDonald that he try the following simple experiment: Having connected the 'polarizer' with his leg by means of the 'common electric cord,' let him place one hand over his mouth and nose, thus shutting off oxygen of the atmosphere from the lungs, which have been provided by nature to furnish the necessary supply of this gas. Now let him note by a watch how long the supply of oxygen 'absorbed from the entire surface of the body' will answer as a substitute for nature's method of supplying this gas. We venture also to suggest to the Rev. Wm. McDonald that 'all traces of la grippe and of an old sunstroke trouble' might have disappeared during the year if he had not used the Electropoise. Assuming that this certificate is genuine, it answers very well to illustrate the fact that educated men who have not been trained in the methods of scientific investigation often arrive at conclusions entirely unjustified by the evidence before them and by the dangerous use of the *post hoc ergo propter hoc* method of argument."

The fact that a considerable proportion of those who are sick from various acute or chronic ailments recover after a time, independently of the use of medicinal agents or methods of treatment taken in connection with this tendency to ascribe recovery to the treatment employed, makes it an easy matter to obtain certificates of cure for any nostrum which an unprincipled money-seeker may see fit to offer to a credulous public. If 10 in a 1000 of those who have used the alleged remedy believe themselves to have been benefited, their certificates will answer all purposes of exploitation and the 990 will not be heard from by the general public.

As was to have been expected, the X-ray has already been made a source of revenue by more than one pseudo-scientist. The following account of the *modus operandi* of its supposed therapeutic action has recently been published in the newspapers:

After the Crookes tube is excited by the coil the magnetic lines of force are projected down in the same manner as they pass off from a magnet, and traversing the intervening space, pass through the body down to the floor and back to the coil and tube again, completing the circuit.

The X ray is electrostatic in character and of a very high potential. With every discharge from the Crookes tube oxygen is liberated in the body, as well as the surrounding atmosphere, which, combining with nascent oxygen, forms ozone.

It is due to the electrolysis produced in the body that we are able to destroy the bacilli in contagious disease, ozone being the most powerful germicide known.

We remark, first, that we do not fully understand why "the magnetic lines of force" are reflected back by the floor, "completing the circuit." Inasmuch as the X-rays pass through wood, this mysterious action of the floor appears to call for some further explanation.

We will pass by the ingenious explanation of the formation of ozone, as a result of the action of the X ray, to call attention to the mistaken statement that ozone is "the most powerful germicide known."

The experiments of Fränkel show that the aerobic bacteria grow abundantly in the presence of pure oxygen, and some species even more so than in ordinary air.

It was formerly supposed that ozone would prove to be a most valuable agent for disinfecting purposes, but recent experiments show that it is not so active a germicide as was anticipated, and that from a practical point of view it has comparatively little value.

Lukaschewitsch found that one gram in the space of a cubic meter failed to kill anthrax spores in twenty-four hours. The cholera spirillum in a moist state was killed in this time by the same amount, but fifteen hours' exposure failed to destroy it. Ozone for these experiments was developed by means of electricity.

Wyssokowicz found that the presence of ozone in a culture medium restrained the development of the anthrax bacillus, the bacillus of typhoid fever, and others tested, but concludes that this is rather due to the oxidation of bases contained in the nutrient medium than to a direct action upon the pathogenic bacteria.

The conclusion reached by Nissen, from his own experiments and a careful consideration of those previously made by others, is that ozone is of no practical value as a germicide in therapeutics or disinfection.

Unfortunately lack of information relating to the definite results of scientific investigations is not confined to the non-medical members of the community. The statement above quoted to the effect that the X-ray, by electrolysis, produces ozone when passed through the body and that ozone is the most powerful germicide known, sounds very scientific, and having been made by one who has a legal right to attach the letters M. D. to his name, no doubt has been accepted as a reliable statement of fact by many educated people who have read the newspaper paragraph in which the statement occurs, which, having started in Chicago, was widely copied as an item of interest to the public in connection with the recent discovery of the remarkable properties of the X-ray.

Whenever any new discovery in medicine is announced some conservative physicians, and often men of reputation in the profession, are sure to commit themselves to a positive denial of the alleged fact. This occurred when the discovery of the tubercle bacillus was announced by Koch, it has occurred with reference to the treatment of diphtheria by antitoxin, and to the preventive treatment of hydrophobia by Pasteur's method. Yet these discoveries are based upon experimental evidence of the most unimpeachable character. To deny their reliability at the present day is simply to show ignorance of the nature of this evidence or a failure to appreciate its scientific value. Often the positive and premature statements of a physician relating to new discoveries in medicine are corrected, or at least regretted, at a later date; but sometimes the pride of opinion prevents a retraction in the face of the most conclusive evidence. The result is that such opinions, although they may have been given years ago, are always available to controvert the statements of those who maintain the value of vaccination, of experiments on the lower animals, of the diphtheria antitoxin, etc., and the non-medical public very often accept the opinions which coincide with their preconceived views, or arrive at the conclusion that there is nothing settled in our so-called medical science. It should be our aim to remedy this evil by elevating the standard of medical education, as we are doing in many parts of the country, by impressing upon the rising generation of physicians the importance of laboratory work not only as a means of instruction, but for the purpose of cultivating a scientific spirit of inquiry and just appreciation of the value of experimental evidence; and, finally, by instructing the public with reference to the present status of scientific medicine, the difference between fact and fancy, between the vagaries of the imagination and the demonstrable results of scientific investigation.

With the progress of scientific medicine, we have improved methods of teaching, and it is now generally recognized that reading medical books and listening to lectures is not a sufficient preparation for the practice of medicine, any more than the reading of

books on navigation would be for the responsible position of captain of an ocean steamer. It is for this reason that we insist upon the study of anatomy in the dissecting room, the teaching of methods of diagnosis and treatment at the bedside, and of chemistry, physiology and pathology in the laboratory. It is only within the past few years that our leading medical colleges have provided suitable facilities for practical laboratory work and even at the present day, as I understand, the laboratory courses are not compulsory in some institutions which provide for a four years' course of study as a requisite for receiving the degree of doctor of medicine. From my point of view these laboratory courses are a most essential part of the medical curriculum, not only because the student becomes familiar with the use of instruments and methods which will be of inestimable value to him in the practice of his profession, but especially because of the effect of the kind of training he there receives in enabling him to judge of the imperfections of our unaided senses and the small value of opinions in comparison with that of facts capable of demonstration; as also the relative importance of many things which to the superficial observer might appear to be insignificant and unworthy of attention. He learns not to accept the assertion of the professor in the lecture room or the dictum of any authority if this is in conflict with experimental evidence which he is able to verify for himself. On the other hand, he learns not to have an overweening confidence in his own judgment and powers of observation. He may fail to demonstrate the flagella on the typhoid bacillus, or the presence of the plasmodium in the blood of a malarial fever case, or of a trace of arsenic in the tissues of one who died with symptoms of arsenical poisoning. But having learned by repeated investigation that the failure was due to his want of expert skill in the use of the microscope or in the application of delicate methods of investigation, he learns that it is unscientific and injudicious to give a premature opinion in regard to any subject under investigation, and especially so when this opinion is based upon negative evidence. Failure to find the tubercle bacillus in a given specimen of sputum has little value unless the examination has been repeatedly made by an expert. It unfortunately too often happens that physicians, after a very perfunctory investigation, give a positive opinion based upon negative evidence. I have investigated, I have not found, consequently it does not exist. This is the attitude of the unscientific but self-satisfied man and it often leads to mistakes which are not only discreditable to the individual but damaging to the profession of medicine; for the mistakes of the doctors, as a rule, attract much more attention than their successes. The painstaking work and attention to details required of students engaged in chemical, physiological, bacteriological or histological studies, and the failure in their attempt to repeat an experiment or demonstration if through haste or carelessness they neglect any steps in the necessary technical processes, constitute an invaluable lesson. Indeed the scientific medicine of the present day can only be taught by such methods, and the scientific physician of the future must make his way to fame and fortune by traveling this somewhat difficult and time-consuming road.

I have spoken of the danger of arriving at hasty conclusions upon negative evidence, and wish now to call attention to the fact that physicians too often fail to recognize the value of negative evidence as opposed to the deductions made from facts coming under their immediate observation. Thus, a case of paralysis following diphtheria may be ascribed to the administration of diphtheria antitoxin, but in view of the fact that paralysis often follows diphtheria when no antitoxin has been given, and of the negative evidence relating to the administration of the antitoxin in thousands of cases and in immunizing doses in other thousands of individuals, the deduction in a particular case that paralysis and the administration of antitoxin stand in the relation of cause and effect may well be doubted. Again, when a case of yellow fever occurs in one of our seaport cities, failure to trace the channel of infection has not infrequently led to the inference that the disease was of local origin. The fallacy here depends upon the assumption that the investigation has excluded all possible avenues for the importation of the infectious material from a foreign source, and a want of appreciation of the negative evidence which shows that yellow fever epidemics never have their origin at interior towns, and that they do not originate at towns on the sea-coast which have no foreign commerce. As well might we conclude, as perhaps some have done, that a case of smallpox is of *de novo* origin because the physician who sought to find the source of contagion was unable to do so. The negative evidence, relating to the non-occurrence of smallpox among persons not exposed directly or indirectly to contagion, is so conclusive that the profession accepts it as a fact that this disease does not originate independently of a previous case. It is a remarkable fact that some physicians still contend that the deaths which occur from hydrophobia in persons treated by Pasteur's method are due to the treatment and not to the bite of a rabid animal. If there is anything definitely settled in medical science we know that there is an infectious disease which we call hydrophobia, or rabies, which is transmitted from one animal to another and from animals to man by inoculation, through the bite of a rabid animal Yet this well-established fact is denied by certain physicians. And ignoring the fact that more than ninety-nine out of one hundred of those who have been subjected to the Pasteur treatment have not developed hydrophobia although they had been bitten be animals proved in a considerable proportion of the cases to have been rabid the inference is drawn that the few deaths (less than 1 per cent.) from hydrophobia which have occurred during or after the treatment are due to this and not to the bite of the rabid animal which preceded the application for treatment.

My object at present is simply to illustrate the value of negative evidence and not to present in detail the experimental evidence relating to the success of Pasteur's method of preventing the development of the disease in persons bitten by a rabid animal. But I may say, *en passant*, that this is one of the great and well established achievements of scientific medicine, which, however, is still doubted by many physicians not familiar with the evidence and positively denied by those who prepare and circulate sensational anti-vivisection literature. In supporting this view they ignore the evidence and publish the opinions of physicians, more or less distinguished, in opposition to the value of the method; which opinions were in some cases given years ago and before the method had been subjected to a sufficient test to demonstrate its practical value. The point I am trying to make

clear is that it is not only unscientific to give a positive opinion in advance of the evidence, or by one who is not entirely familiar with it, but that such snap judgments reflect discredit upon the profession. They are used by the enemies of scientific medicine to support their denial of any value resulting from animal experimentation, and greatly increase the difficulties of those whose task it is to convince legislative bodies that the progress made in scientific medicine during the past twenty-five years has been largely due to such experiments, and that restrictive legislation would to a great extent, arrest this progress.

Having referred to the injurious consequences of premature and unfounded opinions, especially when given by men of prominence in the profession, I desire to call attention to the best method of counteracting such mischief. This is undoubtedly by united action on the part of the more enlightened members of the profession in behalf of truth and progress. This assistance we have had in combating the antivivisection bill introduced into the United States Senate and vigorously pressed by the members of the Washington Humane Society, supported by their misguided friends in various parts of the country. The result has been eminently satisfactory, and shows that when exercised in a just cause the influence of the medical profession is a factor which will not be ignored even by the Senate of the United States.

Having made frequent reference to scientific medicine, it may be profitable to spend a little time in a consideration of the foundations, methods, resources and prospects of medical science as it exists today. We admit in advance that there is still much in medical teaching which is not science, but which is founded upon unproved theories and the traditions which have come down to us from a pre-scientific age. But medical teachers and writers show a constantly increasing appreciation of the methods of science and of the nature of the evidence demanded by it for the establishment of truth, and a corresponding want of respect for assertions and theories the truth of which has not been demonstrated.

In all departments of science our exact knowledge has been obtained by observation and experiment, and the advancement of science has largely depended upon improvements in methods of observation and experiment. Thus, the primitive astronomer observed the stars with the unaided eye, but the astronomy of the present day depends upon observations made with the telescope, measurements made with instruments of precision and mathematical processes, the results of which can be controlled and proved in various ways. So in medicine, the older physicians relying upon their unaided senses, made and recorded observations, some of which were exact and constitute part of the medical science of the present day, but many of which were inexact and unreliable, as were the inferences drawn from them. Until the compound microscope was invented and perfected we had no means of discerning the micro-organisms which have been proved to be the cause of many of the infectious diseases, or of recognizing the histological changes which result from various disease processes. By the invention and practical application of such aids to diagnosis as the stethoscope, the ophthalmoscope, the clinical thermometer, the laryngoscope, the vaginal and rectal speculum, the stomach tube, the urinary test case, the microscope and the X-ray apparatus, we are able to recognize pathological conditions which to the unaided senses of our predecessors were beyond discovery, and which being known only by their effects led to vague speculations and vain theories as to the etiology of disease.

Evidently scientific medicine must be founded upon an exact knowledge of the structure (anatomy) and functions (physiology) of the human body in a healthy condition and of the changes in structure and function (pathology) which result from various disease processes; of the causes (etiology), natural history (clinical medicine) and regional distribution (medical geography) of the diseases which afflict mankind and the lower animals (comparative pathology); of the toxic action of various substances from the animal and vegetable kingdom (toxicology), and of the use of these and of other non-toxic substances, physical agents, etc., in the treatment of disease (therapeutics) and of the prevention of disease by disinfection, quarantine protective inoculations, etc. (prophylaxis).

Anatomy, as a fundamental branch of medical science, may be said to have had its birth when dissection of the human body was first practiced by the Greek physicians Herophilus and Erasistratus, about 300 years before the birth of Christ. Since that time constant additions to our knowledge have been made by the same method, and during the present century by the use of the compound microscope, of various staining methods, etc., which have revealed to us the minute anatomy of the tissues. The discovery that various tissues are made up of cells of diversified forms and functions, and that all of these have their origin from one primordial mother cell—the ovum, belongs to the present century and must be regarded as a fundamental fact in its relation to scientific medicine.

The study of structure naturally preceded that of function, and accordingly we find that physiology is of recent birth. Indeed, physiology had no scientific foundation before the discovery of oxygen by Priestly in 1774, and its progress since that time has gone hand in hand with that of chemistry. Some of its most notable achievements during the present century are: The discovery of the digestive ferments and their action, of the function of the red corpuscles of the blood as carriers of oxygen, of the glycogenic function of the liver, of the inhibitory influence of the pneumogastric nerve upon the heart. It is evident that in advance of these discoveries, which all belong to the present century, there was no scientific basis for medicine so far as physiology is concerned. But today the tripod upon which scientific medicine rests, viz., anatomy, chemistry and physiology, is a substantial structure made up of established facts. While scientific medicine could not exist independently of these fundamental branches, they simply constitute the basis upon which the superstructure has been reared, to a large extent during the last half of the present century. The histologic changes which occur as a result of various disease processes, were unknown and unknowable in advance of the invention of the compound microscope, and the same is true as regards the etiology of infectious diseases. While we owe much to the methods of research devised by Pasteur, Koch and other pioneers in this line of investigation, in the application of these methods the compound microscope is absolutely indispensable. And as medicine could not claim to be

scientific so long as we were ignorant as to the etiology of disease, and of the histologic changes resulting from disease processes, we must recognize the perfection of the compound microscope as the most important event of the century from our present point of view. The principle involved in the construction of the compound microscope was invented as long ago as the sixteenth century, but it is only within the present century, and principally during the last half of the century, that those improvements have been made which have made it available for etiologic and histologic studies. There is, however, a growing disposition to suspect that our microscopes, notwithstanding the great degree of perfection attained in their construction, are still inadequate to the task of revealing to us the specific infectious agents of certain diseases, because of their minute size.

In a late number of the *Centralblatt f. Bacteriologie* Löffler and Frosch have published their official report of investigations, made for the German government, relating to the etiology of foot and mouth disease of cattle, the results of which are very interesting in this connection. As in smallpox, rabies, scarlet fever, typhus fever, and certain other infectious diseases, the efforts heretofore made to demonstrate the specific etiologic agent in foot and mouth disease have been unsuccessful. The carefully conducted investigations of Löffler and Frosch also failed to demonstrate the presence of any specific micro-organism in the lymph drawn with proper precautions from the vesicles about the mouth or udder of infected cows. Cultures in various media inoculated with this lymph remained sterile and no micro-organisms could be demonstrated, by the use of the microscope, in stained preparations. Nevertheless, experiments showed that this lymph was infectious material and that calves inoculated with a very small amount of it invariably developed the disease in two or three days. Very much to the surprise of the investigators named, they found that lymph which had been filtered through a porcelain cylinder, which was proved by experiment to arrest the passage of bacteria, retained its full infecting power. That the result was due to the multiplication of the infectious agent in the body of the infected animal, and not merely to the introduction of a very toxic non-living substance present in the lymph, was shown by the small dose required to produce the disease (1-10 to 1-40 c.c. of filtered lymph), and also by the fact that the disease could be transmitted to other animals by inoculating them with like amounts of lymph taken from the vesicles which developed in the calves inoculated with filtered lymph. The authors conclude their report as follows:

> It seems difficult to escape the conclusion that the action of filtered lymph does not depend upon a soluble constituent, but upon an agent capable of self-multiplication. This must be so small that it can pass through a filter which retains the smallest known bacteria. The smallest hitherto known bacterium is the influenza bacillus of Pfeiffer. This has a length of 0.5 to 1 $\mu$. If the supposed micro organism of foot and mouth disease were only $\frac{1}{10}$ or even $\frac{1}{5}$ the size of this, which is not at all impossible, it would, according to the reckoning of Professor Abbe of Jena, be too small to be recognized by our microscopes, even when provided with the best immersion objectives.

In the department of etiology the most brilliant and far-reaching discoveries of the century are the discovery of the anthrax bacillus (1850) and demonstration of its etiologic relation to the disease with which it is associated, by Davaine, Pasteur, Koch and others (1863–1875); the discovery of the tubercle bacillus by Koch (1882) and the discovery of the malarial parasite by Laveran (1879). These discoveries, so essential to the progress of scientific medicine, would evidently have been impossible without the aid of the compound microscope. But just here I wish to insist upon another point, which is, that for the untrained eye the microscope is little better than a toy and it may even be regarded as a dangerous instrument because of the inevitable mistakes which the novice will make if he undertakes to decide questions of diagnosis by the use of high power oil-immersion objectives without having had the necessary training for such delicate work. In blood examinations, especially, considerable experience is necessary in order to give value to the evidence afforded by a microscopic investigation. It is a very easy thing for the non-expert to overlook the malarial parasite, and still easier to mistake vacuoles in the corpuscles, deformed red corpuscles, etc., for parasitic elements. But the scientific physician will make himself an expert and I trust the time is not far distant when the microscope will be considered by the practicing physician as essential for daily use as is the stethoscope, or even the clinical thermometer.

For the illiterate and even for many of the so-called educated class the whole of medicine consists in the cure of disease by medicines, or by some agency, natural or supernatural, and a failure to cure is evidence that medicine is not a science. We readily admit that the cure of disease is one of the principal objects which medical science has in view, and that from a scientific standpoint therapeutics is very much behind some of the other branches of medicine. This is shown by the diversity of remedies prescribed for certain diseases, and the failure of any one of these remedies to effect a cure in many cases. But on the other hand, therapeutics has made great advances during recent years and by the application of scientific methods of research, the exact value of alleged remedies and of various methods of treatment is now determined with far greater precision than formerly.

A few years ago the intelligent and honest physician did not claim to have any considerable number of specific remedies at his command; but his scientific knowledge relating to the cause, symptoms and pathology of disease enabled him to conduct many cases to a successful termination, which without his assistance would have proved fatal. By the use of instruments of precision and scientific methods of investigation he was able to make an early diagnosis, and to give advice which might stay the progress of a disease, which in its more advanced stages it would have been beyond his skill to arrest.

Recently several additions have been made to the list of specific therapeutic agents, and there is good reason to believe that further discoveries in this direction will be made as a result of investigations now being conducted in pathologic laboratories in various parts of the world. Among the most important recent discoveries in this department of scientific medicine, I may mention the use of thyroid extract for the cure of myxedema, and the antitoxin of diphtheria. The discovery of the diphtheria antitoxin promises to be as important for therapeutics as the discovery of the anthrax bacillus was for etiology, and will no doubt henceforth be regarded as one of the most notable achievements of the century. It resulted directly from laboratory experiments relating to the production of immunity. The demonstration of Pasteur that ani-

mals could be rendered immune against anthrax and other infectious diseases by one or more inoculations, with an attenuated culture of the pathogenic bacillus to which they were due, at once led to an attempt to explain this immunity, and to numerous experimental investigations having this object in view. The result of these investigations was the discovery that the blood of animals rendered immune by such inoculations contains specific antitoxins which may be utilized for the production of immunity in other susceptible animals, and also in certain cases, for the cure of an infectious disease. While the practical results have been most notable in the case of diphtheria, some success has been attained in the specific treatment of tetanus, streptococcus infection, pneumonia, and even in tuberculosis. These results give encouragement to the hope that future investigations may develop methods of obtaining these antitoxic substances in such form and amount as will enable us to successfully use them in the treatment of those infectious diseases for which we have not heretofore had a specific remedy.

A recent discovery of considerable importance from several points of view is the so-called Widal-reaction. This depends upon the fact already demonstrated for several pathogenic bacteria, that during the progress and within certain limits, after the termination of a specific infectious disease due to micro-organism of this class, a substance is formed in the blood which has a specific action upon the particular bacterium which is concerned in the etiology of the disease. The reaction consists in the agglutination of the bacterial cells in groups or masses, and in the arrest of motion in motile bacteria in recent cultures. The diagnostic value of this reaction in typhoid fever is well established, but the reaction is not always obtained during the first days of an attack, when it would be most useful. However, the scientific value of the test is undoubted and it will be of great assistance in determining the true character of atypical cases of the disease, which have heretofore so often been called by some other name. The importance of this reaction for the differentiation of pathogenic bacteria, which can not readily be distinguished by their morphology and cultural characteristics is apparent. Therapeutics has profited greatly, not only by the scientific researches of chemists and bacteriologists, but also by those of the physiologists and physiologic chemists. Investigations relating to the internal secretions of ductless glands have shown the essential rôle which some of these glands play in the animal economy and also the fact that pathologic changes resulting from their impaired functional activity may be relieved by the administration of extracts from corresponding glands taken from the lower animals.

The curative action of thyroid extract in myxedema is well established, and some success appears to have been attained in the treatment of Addison's disease by an extract from the suprarenal bodies. The active substance in the thyroid has been called iodothyrin. According to Professor Chittenden, this substance is "a non-proteid cleavage product of a more complex body, naturally present in the gland and characterized by containing both iodin and phosphorus." He considers it pretty thoroughly established that iodothyrin "possesses all the peculiarities associated with thyroid therapy."

Abel and Crawford have succeeded in obtaining the active alkaloidal substance from the suprarenal bodies in the form of a sulphate. This in very small quantities causes a remarkable rise in blood pressure when injected into animals, and applied locally it promptly causes a constriction of the vessels of an inflamed eye.

Let us turn, for a moment, from therapeutics to prophylaxis. Here the progress of medical science has been even more prolific in practical results. Where thousands have been saved by the timely administration of suitable medicines, or by the skilfully performed operation of the surgeon, tens of thousands have been saved by preventive medicine. And preventive medicine is today established upon a strictly scientific foundation. If our practice was *pari passu* with our knowledge, infectious diseases should be almost unknown in civilized countries, and those degenerative changes of vital organs which result from excesses of various kinds would cease to play a leading part in our mortuary statistics. But while our knowledge is still incomplete in some directions, and while individuals and communities constantly fail to act in accordance with the well-established laws of health and the scientific data which furnish the basis of preventive medicine, the saving of life directly traceable to this knowledge is enormous.

Smallpox no longer claims its victims in any considerable numbers except in communities where vaccination is neglected; cholera has been excluded from our country during the last two widespread epidemics in Europe and its ravages have been greatly restricted in all civilized countries into which it has been introduced; the deadly plague of the seventeenth and eighteenth centuries is no longer known in Europe, and the prevalence of typhus (so-called "spotted" or "ship fever") has been greatly limited. Typhoid fever, tuberculosis and diphtheria are still with us and claim numerous victims, but we know the specific cause of each of these diseases; we know where to find the bacteria which cause them and the channels by which they gain access to the human body, and we know how to destroy them by the use of disinfecting agents.

The mortality from tuberculosis is constantly diminishing in our large cities, and the complete destruction of the infectious sputa of those suffering from pulmonary tuberculosis would no doubt go a long way toward the extermination of this fatal disease.

For a long time vaccination as a means of preventing smallpox stood as a solitary example of prophylaxis by inoculation with an attenuated virus. But Pasteur and others following in his footsteps have shown us that protective inoculations may be successfully practiced in several of the infectious diseases of the lower animals. Haffkine's cholera inoculations appear to have been attended with considerable success, and recent experiments in inoculating susceptible persons with cultures of the typhoid bacillus give some encouragement to the belief that they may be rendered immune against typhoid fever by this method. That children may be rendered immune against diphtheria by comparatively small doses of the antitoxin is well established. The value of Pasteur's method of inoculation for the prevention of hydrophobia in persons bitten by rabid animals is now generally recognized by well-informed physicians.

The time at my disposal is entirely inadequate for the purpose of setting forth the present status of scientific medicine, but I trust that enough has been said to justify the claim that we are not "old school doctors," and to show that medicine has not been

behind other branches of science in taking advantage of improved methods of research and in establishing itself upon the sound basis of facts, demonstrated by experiment and observation with instruments of precision.

What has been said will also show that there is no room for creeds and pathies in medicine, any more than in astronomy, geology or botany. Every man is entitled to his own opinion upon any unsettled problem, but if he entertains an opinion in conflict with ascertained facts he simply shows his ignorance. There is no restriction placed upon any physician who graduates from our regular schools as to the mode of treatment he should pursue in any given case. If he sees fit to prescribe a bread pill or a hundredth trituration of carbo vegetabilis there is no professional rule of ethics to prevent him from doing so. But if his patient dies from diphtheria because of his failure to administer a proper remedy, or if he recklessly infects a wound with dirty fingers or instruments, or transfers pathogenic streptococci from a case of phlegmonous erysipelas to the interior of the uterus of a puerperal woman, it would appear that the courts should have something to say as to his fitness to practice medicine. There is, however, nothing in the code of ethics which will prevent him from associating with reputable practitioners. But no matter where or when he obtained his medical degree, he can scarcely be said to belong to the modern school of scientific medicine. We must not fail to recognize, however, that the progress of knowledge has been so rapid that it is impossible for the busy practitioner to keep pace with it, and that even the requirement now generally adopted by our leading medical schools, for a four years' course of study, is inadequate for the attainment of such a degree of professional knowledge and practical skill in diagnosis and therapeutics as is desirable for one who intends to practice scientific medicine.

## UNIFORMITY THE KEY TO RECIPROCITY.

Presidential Address to the National Confederation of State Medical Examining and Licensing Boards, eighth annual meeting, held at Denver, Colorado, June 6, 1898.

BY WILLIAM WARREN POTTER, M.D.

BUFFALO, N. Y.

The members of this Confederation are entitled to receive the thanks of the communities which they represent upon the substantial progress that is making all over the Union toward a more perfect system of medical education. It is believed that these improvements have been due in a large measure to the influence exercised by State medical examining boards. It has been my privilege on previous occasions when addressing this body to refer to the relationship between the medical schools and the State examining boards, and I hope I may be pardoned for again calling special attention to this subject, which I regard of much importance.

Before entering into its extended discussion, however, let me remark that it is a significant fact that no medical journal or magazine of influence anywhere in the United States has uttered a word of antagonism to the system of separate examination by the State, a practice which is fast becoming prevalent in all the States and Territories. If a few of doubtful standing have endeavored to create dissension, or have expressed opposition to the method, they have found no listeners, or at least they have not been able to impress their readers with their sincerity or the justice of their wail.

Society papers, too, have been devoid of adverse criticism except, perhaps, in a few unimportant instances. There was a time when considerable criticism was directed toward the character of the examinations, especially at the questions propounded; but as the conditions have been more and more appreciated we observe less complaint of this kind. It has been stated that only teachers in the schools could adequately examine for the State. However much this might appear good in theory, in practice its fallacy has been demonstrated. Only theorists now venture to affirm or reaffirm this now exploded sophism.

No one will, I believe, asseverate that the state examinations are perfect, for there is still much room for improvement; but the work may well be left in the hands of the examiners, who may be intrusted with it with every confidence that they will address themselves to its faithful and honest prosecution.

The colleges have now agreed by a considerable majority that four years is the proper time to set apart to medical training. Not a few are of the opinion that nine months in each year should be devoted to college work. Perhaps all will soon come to this conclusion. The two important questions remaining to be next settled are: 1, uniformity in preliminaries, and 2, equalization of State examination. The first concerns the colleges, the last the examiners must attempt to solve.

By far the most important of the two is the one relating to preliminary qualifications requisite to entitle a neophite to enter upon the study of medicine. If all medical colleges could agree upon a uniform minimum it would not be long before other moot questions would be settled, even to the interstate indorsement of licenses.

The difficulties in the way are chiefly of degree; for none question, so far as I know, the necessity of some literacy before accepting matriculates. In the East the tendency is toward higher preliminaries than in the West and South. Our Southern friends contend that good doctors can be made with less education than would satisfy our Eastern ideals; that in the mountainous regions not so much of letters as of sense is demanded; that highly educated men will not settle in those districts, hence the people will suffer for want of medical service; and that for these and other reasons not only must they be permitted to accept students with a low grade of educational attainments, but that also they must be allowed to graduate them in medicine after shorter terms of collegiate training. This on its face seems reasonable and is convincing to many; at least it appears to satisfy the consciences of many college professors. It is not an argument, however, that would hold for a moment if all the colleges were endowed. It is difficult to overcome it so long as incomes depend upon numbers in attendance. It has, however, been the experience of schools that have adopted high preliminaries, that the more intelligent students are attracted to their amphitheaters; that a more satisfactory quality of instruction can be imparted; that less time is required in primitive work and that broader training is the result.

It is a mistake to suppose that students will flock to low grade schools. They almost invariably search for the best and will not be satisfied with less. It is

a quality of the American character to surmount obstacles and to triumph over difficulties. This is as true in relation to medicine as in other affairs of life. If medicine is made easily it is not highly prized nor does it command respect. Cheap articles are of little value and are soon wasted. So a professional diploma easily obtained and bestowed upon the illiterate is tossed about or treated with indifference.

It is difficult to understand why there should be opposition to a reasonable elevation of preliminary requirements by any college of pride or standing. Is it unreasonable to say that no candidate should be admitted to matriculate who does not at least possess such acquirements as are demanded of a high school graduate? Surely no experienced teacher could reasonably object to such a standard as a minimum requirement.

Let us see if it works an injustice to the student. I have yet to meet a physician of a few years experience in practice who was deficient in his English education who did not regret the fact. Many have blamed the colleges for accepting them without proper preliminary acquirements. A very large group of this class begin to feel chagrin before their medical training advances very far. They mingle with other students well trained in their preliminaries and are not slow to recognize the immense advantage possessed by such, and to keenly feel their own incompetency. A few, perhaps, are indifferent to such accomplishments, but these generally hire themselves to a medical grocer who deals out his cure-alls by the gallon and advertises a medical staff of attendants with the illusory addendum—consultations free. Or, perhaps they employ a team of horses and a wagon and go about the country auctioneering their wares in sad English and with sadder morals.

Thoughtful men who enter medicine always feel regret when their early education has been neglected and they are quite inclined to blame the colleges for accepting them under such conditions. It would seem, therefore, a kindness to the students themselves to establish such a minimum standard of preliminaries as will make men self-respecting, as well as conduce to an appreciation of the dignity of the profession of medicine.

It seems to me that it has already been clearly demonstrated that neither teachers nor pupils are satisfied with anything less than a reasonable preliminary educational standard. It is true that some college professors are not yet aroused to the real necessities that are presenting on this question; indeed, they in a few instances are inclined to ridicule any attempt to make things better. But such men are more to be pitied than to be condemned. They form the small minority that is constantly growing beautifully less. They sometimes display their oratory in debate or their facile pens in the magazines, but beyond a momentary applause they get very little recognition and still less approbation. I wish all such could have heard Dr. Holland, the distinguished president of the College Association, when he addressed this Confederation last year. It seems to me that his convincing words would have forever silenced opposition to the principles involved in the reforms we are seeking to establish.

In turning to the problem of equalizing or standardizing the State examinations we find a field for serious and ample thought. If we ask the colleges to adopt a uniform standard as to time, four years' courses of nine months each, and similar methods of instruction in laboratory and clinical work, is it not fair to them that we, ourselves, should establish a similarity of methods in conducting the State examinations? Is it not fair to teachers and candidates for State license that we shall foreshadow the general lines of our examination by a properly prepared syllabus and by modeling our questions upon the modern methods of teaching? Should we not in all the States also have similar examination tests, such as a uniform number of questions in each of the principal divisions of medical science, and a uniform period of time for conducting the examinations? These are some of the questions that are first presented in an inquiry of this kind.

One of the most absorbing questions connected with State examinations is that of reciprocity of licensure. When it is ascertained that physicians licensed by any one State can not commence practice in another State without submitting again to an examination, it naturally provokes criticism against the system. Sometimes this criticism becomes angry and defiant, and examining boards are condemned as being responsible for a faulty system.

Thoughtful men will, however, easily understand how unfair it would be to accept licenses indiscriminately by States having high standards. The pathway to reciprocity consists in establishing not only uniformity of methods of teaching, but similarity in systems of examination by the several States. Just as soon as colleges can agree upon a minimum standard of requirements, the examiners must turn their attention to standardizing their work. I hope much progress will be made this present session of the Confederation in bringing about the former. When this is accomplished it will be in order for a committee to be created by this body, probably to consist of one member from each State and Territory represented in it, whose province shall be to take into consideration the propriety of standardizing the examinations.

It is not my purpose at this time to enter into a discussion of the details of this important subject, but rather to invite attention to it in the expectations that some thought will be bestowed upon it that will lead to a clearer conception of the way and manner it should be dealt with when it comes up for consideration. Some reference was made to it in my annual address last year. I wish to accentuate what I then said on the subject, and to invite your serious attention to this most important and essential duty.

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## ADDRESS.

Presidential Address delivered before the Arkansas Medical Society, Little Rock, Ark.

BY A. J. VANCE, M.D.

HARRISON, ARK.

Today treasure-laden memory brings before me as an ever-changing kaleidoscope the faces of the men who have stood as I stand today before this honorable body. Some are still with us giving their energies and intellects to the up-building of our profession. Others have crossed over and are resting from the toil and heat of the day. Not only the faces of the men who have preceded me for the fifteen years I have known this society, but many of their thoughts found an abiding place in my search for medical knowledge, that have often been of great benefit to me.

It is not my object to speak today of the recent developments that have been made in the world of

medical science. It has been a matter of great interest to know something of the foundation of medicine, and in my research I find that it is from the Egyptians that we have our first intimation of the grand science which we represent. They had several divinities who presided over the cure of diseases, the principal one being Isis, a woman. Thot is supposed to be the author of the oldest medical works. These were engraved on pillars of stone, and afterward collected, formed a part of the so-called Hermetic books, from the prescriptions of which no physician might deviate, unless he was willing to expose himself to punishment in case the patient died. The remains of these books are probably preserved to us in the papyri of Leipzig and Berlin. The Leipzig papyrus was committed to writing in the sixteenth century, B. C. and was the offspring of an epoch of high civilization in Egypt.

The Berlin papyrus was committed to writing in the middle of the fourteenth century B. C., and the substance of both these works are referred back to the fourth millenium before our era.

The papyrus at Leipzig has been only partially deciphered, but in it we find remedies for diseases of the stomach, the abdomen, the bladder, and the removal of glands from the groins, a cure for falling hair, remedies for foul breath, etc The books are by different titles; for instance, one is called "The Book of Eyes," another, "The Book of the Banishing of Pain." It was the duty of the priests to study these books. We suppose they had specialists, as we read that when an individual needed treatment, he must send to the president of the temple, who selected and despatched the specialist best suited to the case.

It is doubtful if they had hospitals, as it was often the case that the sick were exposed on the street, that they might have the benefit of the advice of the passers-by, who had been cured of a like disease. They did some work in surgery, their process of castration being so dexterous that, even as late as the Roman period, most of the eunuchs were from Egypt. From artificial teeth being found in the mummies, we have reasons to believe that dentistry was also known to them.

History tells us how the original Egyptian medicine began to decline until it finally entirely vanished, except as magic and alchemy. In the middle ages Egyptian medicine was regarded as sorcery.

The next advancement we find in true medicine is among the Greeks in the Ionic school, about six hundred years before Christ. Its founder was Thales of Miletus. After him, for two or three hundred years, there were various theories and schools established, only to go out with probably the death of the originator. It was a time of great superstition and the god Æsculapius held sway over the minds of the masses. Then there appeared Hippocrates, the greatest and most famous physician of all antiquity. He was born 460 years before Christ and was called the great creator of scientific medicine. To him we owe the science of dietetics, as well as prognosis. His feats in surgery were remarkable when it is considered how limited were his instruments. The Hippocrates writings are from fifty to eighty in number, though not all by him, some of them being by unknown physicians of his age and school. He is said to have died 370 years B. C. at Larissa, in Thessaly. Tradition, which throws a halo of glory around all greatness, tells the story that a swarm of bees, whose honey was especially useful in the treatment of aphthæ in children, made their hive within the walls of his tomb.

After him comes the dogmatic school of medicine, in accordance with Plato. During that time originated the prohibition of drink in feverish diseases, the revival of which not many decennia ago, cost the lives of many fever patients.

The next school of importance was the Alexandrian, and although opposed by other factions it exercised an influence on subsequent antiquity, and even to medieval medicine, its educational merit was felt.

During the next several hundred years we find learning and science mixed more than ever with ignorance and superstition. Men then, as in our day, practiced merely to swindle. An example given us is that of an old and well dressed Arabian, who applied to the president of the college at Bagdad for medical examination. At the first question asked, the man drew forth a well-filled purse and shook out the contents. Though the applicant could neither read nor write, this jingling answer was sufficient and he was given a diploma with the understanding that he should never employ active purges, emetics, or perform venesection.

Through the fortunes of war, as one country would gain prominence, so would her medical theories advance, as the power of the country waned, medicine would deteriorate. But some of the wheat was constantly being gleaned from the chaff and, little by little, the science of medicine gathered strength.

The sixteenth century is of importance, similar to the age of Hippocrates, for during this era, the edifice whose foundation he had laid, was enlarged. The teachings that had gained ascendancy through the dark middle ages were thrown down and the banner of Hippocrates sustained with new and independent thinking, was firmly established. Anatomy received fresh impulse; for years it had been almost obsolete, as the only practical illustration allowed was from the dissection of animals; priests, holding that man being born in the image of God, should not be so mutilated. Surgery and midwifery also received fresh impetus. We find that in this period occurred the re-introduction of that most beneficent operation, podalic version. About that time occurred the first Cæsarean section upon a living woman. It was done by a sow-gelder on his own wife, she being in labor with a number of midwives and physicians in attendance, the child could not be delivered. It is said that he went out alone and prayed, then went back and cut into her as he would one of his sows. The child was delivered, and the woman recovered.

Ophthalmology was likewise newly founded. The revival study of the genuine writings of the ancients brought improvements, historically and philosophically. During this time there were several universities founded in Germany, also in other countries. A man of that period who made himself famous was Ambroise Paré, a Frenchman; originally a barber, he became known as a great surgeon and was attached to the king's court. He is said to have decided to study surgery from witnessing a case of lithotomy. He permanently advanced surgery by improving many old ideas, and advancing new ones that have since borne good fruit. He was the first man to introduce artificial labor at full term in case of hemorrhage.

The seventeenth century is of peculiar interest to the American medical profession, as it witnessed the

foundation and early struggles of what may be called American medicine. The earliest practitioners in the colonies were the medical officers sent out by the emigration companies that established the colonies. Dr. Thomas Wooton accompanied the colony that founded Jamestown, Va., in 1607. In 1608, Dr. Walter Russel accompanied Captain John Smith on exploring tours. However, for some reasons these men did not tarry long, so Dr. John Pot was sent to the struggling little settlement and cast his lot for good or bad among them. He, therefore, enjoyed the honor of being the first permanent resident physician of America. He was a man of merit and to some extent, a leader, as in 1628 he was elected temporary governor of Virginia. Among the "Pilgrim Fathers" who came with their families on the Mayflower and settled at Plymouth, was Dr. Samuel Fuller, the first physician of New England. He was held in the highest esteem, both as a man and a physician. As early as 1629 an effort was made to instruct the youths of this new country in the art of medicine. One Lambert Wilson was employed and sent over with a letter of introduction to Governor Endicott. A part of his duty was to instruct one or more young men in the principles of medicine that they might be helpful to him. In 1647 the General Court published the recommendation, that those studying anatomy might have a malefactor every four years (should there be one) on which to experiment.

At that time London and Paris were the favorite resorts for the Americans who went abroad to pursue their studies, but during the eighteenth century the ascendency in medicine fell to Germany, where in 1754, was established the first permanent and successful clinical institution. America, though still in its swaddling cloths, was reaching out with increasing vigor and clamor for knowledge, so in 1765 the University of Pennsylvania opened a medical department. During the next sixty-one years there were eleven other schools organized. The Jefferson Medical College in 1826, being the twelfth school organized in America. There are now 151 medical colleges in the United States, six which were established in the year 1893, half as many in one year as in the first sixty years.

As the science advances the necessity of our being fitted to keep abreast of the advancing tide becomes more paramount. The practice of medicine requires a much higher education and more continuous study than is usually demanded in other callings. The grave results for which we are responsible, compel us, if we are true to the cause we espouse, to be constantly seeking at the "fountain of knowledge." It is therefore with pleasure that I speak of the advancements that have been made in our medical schools and laws.

Not many years ago a man who had practiced medicine four or five years without having attended medical lectures, could, by attending one full course of four months, apply for graduation. Soon the five years practice clause was eliminated. Following closely upon that a three years' graded course was adopted, first optional with the student, then compulsory. Now many of our colleges require a four years' course of six, eight or nine months each.

Notwithstanding the requirements for graduation are more severe year by year, and the cost of medical education has more than doubled in the course of ten years, in the principal institutions of the country the number of students are increasing yearly. Statistics show an attendance in 1894 and 5 of 22,887, with 4827 graduates, an increase of students of 1085 over the preceding year, but a decrease of 306 in graduates.

While the lengthened course of instruction required by most schools may not diminish the number of matriculates, it is no doubt the cause of the decrease of the percentage in medical graduates, and this will probably be still more noticeable as other schools extend their course. A few years ago many of our ambitious graduates in medicine would attend, after graduation, other courses of lectures, taking all the didactic lectures of the course. Seeing the desire of the profession to become more proficient, and recognizing the demand for a college course with all clinical instruction, leaving out the didactic, some of the New York brethren, in the winter of 1880 and '81, organized the New York Polyclinic. This school, together with others since organized, supply a long felt want, enabling a busy physician to get more clinical instruction in six weeks than could be obtained in a five months' course of lectures.

As a result of increased interest and zeal in medical education, there is now some kind of medical practice law in every State and Territory. In twenty-two States, the District of Columbia and the Cherokee Nation, a medical examination is required. In three of these the applicant is only admitted to an examination after showing his diploma. Twenty-five States and Territories and the Choctaw Nation require a diploma. In fourteen of these, the diplomas are required to be from colleges in good standing. Massachusetts honors no diploma except those from colleges in her own borders. Applicants from schools out of the State are required to pass an examination. Arkansas is the only State that grants an examination if the applicant has not a diploma from a college in good standing. In nine States and Territories there are no medical boards, and no one whose duty it is to see that the laws are enforced. It must be that the brilliant achievements of modern medicine and surgery are the direct results of our ever improving system of study and future advancements must depend on the same resources.

The grand march of medical science sweeps ever onward and upward, not in a fitful or fickle way, but with majesty of centuries of study. If we have no ambition to be known outside of our own small sphere it is nevertheless our duty to fit ourselves as well as we possibly can, to render good service to those we are called upon to administer.

We can not all be great in the eyes of the world, but we can prove ourselves faithful to the trusts confided to us. And who has greater trusts than the family physician? He is a part of every family in which he practices. He knows their joys, fears, hopes and disappointments. He is friend and adviser in heights of joy and depths of sorrow. He fosters the feeble life of the wailing mite of humanity as it comes into the world, and the same sympathetic fingers close the eyes of the beloved dead.

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**Immobilization in Pulmonary Tuberculosis** has been tried by Bloch, who reports that a demi-cuirass of plaster on the diseased side stopped the cough, pain and vomiting and reduced the fever, in a number of cases. Auscultation after the removal of the cast in two to three weeks showed that the crepitation and râles had remarkably diminished.—*Semaine Méd.*, May 4.

## ORIGINAL ARTICLES.

### THE DIFFUSE INFILTRATING FORM OF CARCINOMA OF THE STOMACH.

Presented to the Chicago Pathological Society, April 11, 1898.

BY LUDVIG HEKTOEN, M.D.

CHICAGO, ILL.

On presenting a specimen of diffuse carcinoma of the stomach to the Johns Hopkins Hospital Medical Society, Professor Welch[1] remarked that there are three diseases that may produce gross alteration in the stomach, indistinguishable from each other to the naked eye, viz., cirrhosis or fibroid thickening of the stomach, primary infiltrating carcinoma and secondary infiltrating carcinoma of the stomach. Orth[2] regards the majority of instances of contraction of the stomach as due to carcinomatous infiltration, and Welch looks upon a large number of the older cases in literature reported as cirrhosis of the stomach as diffuse carcinoma of this organ, because the diagnoses were not made by microscopic examination.

The first specimen of primary infiltrating carcinoma of the stomach, which I show here, is an example of a fibrous carcinoma, or scirrhus, occurring in a woman 45 years old, who had suffered some months with ascites, which required repeated tappings; there was also progressive emaciation, but never any prominent gastric symptoms. Postmortem there was emaciation, brown atrophy of the heart and atrophy of the liver. The abdomen contained about 800 cubic centimeters of reddish fluid. The peritoneum was universally rough and thickened and there were firm adhesions between the intestinal coils and the external wall; between the adherent structures cystic accumulations of clear fluid existed, especially about the cecum, around which the structures were matted together in a hopeless tangle. There were adhesions around the spleen, the stomach, and the pelvic organs. The omentum was drawn up into the form of a thick ridge across the upper part of the abdomen. In the mesentery were bands of thick tissue containing small islands of yellow color. There was marked induration and contracted adhesions about the portal vein, the wall of which seemed thick, the lumen reduced. There was no portal thrombosis.

On separating the perigastric adhesions, the stomach was found to be a small mass about one-third the size of the normal organ; it weighs 389 grams. It seems like a solid, hard organ and retains its outline in whatever position it is placed. Its serous surface is rough and shreddy, the serosa thickened, especially along the greater curvature, where the thickening extends into the contracted omentum; the induration and thickening ceases abruptly at the duodenal and esophageal limits.

Palpation does not indicate a hollow organ. An incision along the lesser curvature reveals a small balloon-shaped cavity, the bulb corresponding to the fundus; the cavity would probably hold 150 cubic centimeters. The mucosa is entirely smooth, pinkish, but thrown into huge stiff folds on account of great thickening in the submucosa. The duodenal and esophageal mucous membranes appear normal. The walls of the stomach are greatly thickened, mostly along the larger curvature; here the wall is 1.5 to 2 centimeters thick; the thickening is due to changes in the submucous and subserous coats principally; these are composed largely of a hard gristly substance. The muscular coat appears more hypertrophied. In no part of the stomach is there any primary tumor. There were no isolated metastases.

Microscopically it is shown that the thickening is due to the growth of a large amount of fibrous tissue in the submucous and subserous coats and to hypertrophy of the muscular layer. Shrunken epithelial cells are present in all coats arranged in small rows and alveolar masses, but the fibrous tissue predominates markedly, and it was necessary to make many sections in order to find any distinct carcinomatous structure. The mucous membrane is not at all characteristic because of a diffuse destruction of its cells and glands. Sections from the omental and peritoneal thickening also show a fibrous carcinomatous structure.

Here we have, then, a diffuse infiltrating fibrous carcinoma of the whole stomach; the growth is primary. The carcinoma has infiltrated the omentum, the peritoneum and the perigastric structures, resulting in great thickening and contracting dense adhesions which, among other results, led to compression of the portal vein and its branches, thus producing an ascites which is of interest from the standpoint of differential clinical diagnosis.

The second specimen of diffuse carcinoma of the stomach concerns an example of the somewhat rare form of infiltrating medullary carcinoma, the ulceration of the mucous surface being confined to a small circumscribed area.

The patient was a man 45 years old, in Dr. Edwards' ward in the Cook County Hospital. The following facts have been abstracted from the clinical notes. The illness began about four months before death with pain in epigastrium, vomiting of food only; has lost almost forty pounds in weight. He was much emaciated, the skin sallow and harsh. There was tenderness over the whole abdomen, the stomach apparently covered by the greatly enlarged liver, which reached below the navel and into the left hypochondrium, being somewhat dome-shaped. Three attempts to secure stomach contents failed; the tube seemed to meet some obstruction at or near the cardiac end of the stomach.

The postmortem showed emaciation and general icterus. There were small but firm nodules on the peritoneum. The lymph glands in the hilum of the liver were much enlarged and caused pressure on the bile ducts, the gall bladder being greatly distended. The retrogastric and retroperitoneal lymph glands were also enlarged and infiltrated. The stomach is very small; it weighs 150 grams; the cavity is very materially reduced in size. On the posterior wall near the esophageal opening is an ulcer with raised margins and rough floor, about 2 by 3 centimeters in extent. Spreading apparently from this point, there has occurred a diffuse infiltration of the walls of the stomach leading to great thickening of all the coats of the organ, which gradually becomes less marked as the pylorus is approached, so that at a point about 6 centimeters from the pylorus the walls seem of normal thickness. The mucous membrane is covered with a grayish black mucus. The liver contained innumerable secondary tumors and weighed 5500 grams.

Microscopically (sections demonstrated) the tumor of the stomach is seen to be made up of rather small

[1] Bulletin Johns Hopkins Hospital, October, 1893.

[2] Pathologische Anatomie.

irregular epithelial cells arranged in a loose stroma in quite solid heaps and columns, which have grown diffusely throughout the coats of the stomach, following apparently the lymph vessels, the infiltration being most pronounced in the submucous and subserous coats, but invading the muscular coat also, in the form of a branching small-alveolated carcinomatous network.

## CECAL HERNIA WITH A CLASSIFICATION OF SIXTY-THREE CASES.

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My attention was turned to the subject of cecal hernia by a case which occurred in the service of Dr. T. S. K. Morton at the Polyclinic Hospital about two years ago and later by another upon which I saw Dr. Richard H. Harte operate at the Pennsylvania Hospital, and it is due to the kidness of these gentlemen and of others who have allowed me the use of their unreported cases, that I am enabled to make the following report. By looking up the literature of this variety of hernia and by making inquiries among operators largely experienced in herniotomy, I have been able to collect and classify sixty-three cases, and from them draw certain conclusions which I trust may prove of interest. In the appended table of cases I have only included the inguinal and femoral varieties of hernia, and of these only such as have been proved clearly to contain some portion of the cecum or appendix, or both.

The history of cecal hernia dates back to the sixteenth century, since when at frequent intervals it has been the subject of much discussion As to its frequency of occurrence it is rather difficult to speak definitely, but, judging from the number of cases recently reported and the number met with in the experience of single operators, one is led to conclude that the condition is more frequent than is generally supposed. Coley of New York, for instance, reports sixteen cases of hernia of appendix or cecum in 351 operations for femoral and inguinal hernia, and says he has frequently been able to diagnose the presence of the appendix in the sac of herniæ where no operation was done. Another surgeon whose experience is limited to twenty-five or thirty herniotomies has met with the condition four times, but this is unusual, as many men who have had a much larger experience have never had a case. The five cases of Wright of Manchester, which were operated upon and are found in this list, occurred in a series of twenty-four herniotomies done in children.

As to the age at which this form of hernia is most likely to be found, authorities have differed, but it certainly seems that it is in early childhood. Treves has said that it "is practically limited to adults," but Wright, Shepard and others regard it as most frequent in children. It is interesting to observe in this connection that Coley, whose work has largely been among children, has reported sixteen cases of cecal hernia, only one of which was in a patient over fifteen years of age, in 351 operations for femoral and inguinal hernia, while Halsted, in 291 operations for inguinal hernia, had only five cases, and in only two of these was the patient over 15 years of age. Combining these statistics we find that in 642 herniotomies there were twenty-one cases in which cecum or appendix was found in the sac, and of these twenty-one only three occurred in patients over 15 years of age. Of the present sixty-three cases, thirty-three were in patients under 15 years of age, five between 15 and 40 years, seven between 40 and 50 years, and fifteen in patients past 50 years. The oldest patient in this series is that of Dr. W. O. Roberts, a man of 80 years. The frequency of this condition in old age or rather after middle life, as shown in these cases, is probably due to the laxity of the tissues at this time of life.

Sex bears an important interest in consideration of this subject, the condition rarely occurring in women, and particularly is this true of the congenital variety. Only eight of the sixty-three are found in women and these patients are all over 40 years of age, and all are femoral with one exception. The anatomic differences, the infrequency of inguinal hernia in women, and the descent of the testicle in the male accounts for the relative frequency in the two sexes.

The right inguinal is the variety of hernia in which the cecum is most likely to be found, next, the right femoral, then the left inguinal and finally the left femoral. Of the present series forty-four are right inguinal, six right femoral, six left inguinal and one left femoral.

When occurring in adults the condition is most likely to be acquired, while in children it is usually congenital; of the thirty-six acquired cases in the present list only eleven are in children; and of the thirty-three congenital cases all are in children. Of the seven left sided herniæ, three were in children and congenital, and four in adults over 58 years of age and acquired. A great deal has been written regarding the cause of this variety of hernia; in children, the condition, being nearly always congenital, or coming on soon after birth, is more easily explained than in adults where it is acquired. During the process of fetal development the cecum is anchored more or less loosely to the front of the spine by its mesentery, and makes a pretty general circuit of the abdominal cavity before it at last settles down in the right iliac region; and it would seem that during this period it would be most likely to find its way outside the abdominal cavity. Wrisberg has accounted for congenital hernia of the cecum by showing how this portion of the bowel may follow the descent of the testicle in the processus vaginalis. Others contend that in fetal life there is a connecting band between the appendix and cecum and the testicle, and in several of the cases here reported the operator found a band attaching the appendix to the testicle so firmly that division with scissors was necessary before reduction could be made. Macready, who has given this subject a great deal of attention, writes that, "in congenital cecal hernia the peritoneal fold (plica vascularis) is generally still present, together with an unusual amount of unstriped muscle, distributed on the posterior wall of the sac and extending from the testis upward to the cecum." Occasionally the cecum does not become firmly fixed in its normal position and in such instances it has been shown to be of much smaller size than is ordinarily the case; a fact which would render hernia of this gut more likely and would probably account for some of the cases of the acquired variety. Still hernia of the cecum coming on in middle life is not easily explained. I am inclined to think, from several of the histories of patients here reported, that the

| No. | Surgeon. | Reference. | Sex and age. | Variety. | Acquired or congenital. | Contents. | Condition of contents. | Results. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Austin, J. E. | N. Y. Med. Rec., 1891, 39, p. 622. | M., 25 | Right inguinal, strangulated. | Acquired, duration 3 days. | Cecum, appendix and 3 in. of ascending colon. | No sac could be found, cecum adherent to scrotal tissues, pale, appendix free, contents inflamed. | Recovery. | |
| 2 | Annandale, Thos. | London Lancet, 1889, i, p. 627. | F., 60 | Right femoral, irreducible. | Acquired, duration 29 years. | Appendix alone. | Pus and blood in and around sac, appendix adherent around neck of sac, occluding it, appendix perforated, but no concretion. | Recovery. | Appendix, 3½ in., removed. Thinks concretion may have escaped with pus without being detected. |
| 3 | Bennett, W. H. | Med.-Chir. Trans., London, 1890, lxxiii, 129. | M., 52 | Right inguinal, strangulated. | Acquired, duration 18 years. | Cecum, containing invaginated ileum without sac. | Below cecum was found a sac containing omentum which was adherent to testicle. | Death. | Hernia was never altogether reducible and on day before admission became suddenly larger. Cecum was unintentionally opened. |
| 4 | Black, R. S. | Brit. Med. Jour., 1890, ii, p. 1177. | M., 69 | Left inguinal, partially reducible. | Acquired, duration 5 years. | Cecum with appendix and portion of ileum. | Appendix adherent to cecum, but not to sac. | | Condition found postmortem; no operation. |
| 5 | Coley, W. B. (1). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 22 | Right inguinal, irreducible. | Not given. | "Cecal." | Not given. | Recovery. | |
| 6 | Coley, W. B. (2). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 4 | Left inguinal, irreducible. | Congenital. | "Cecal." | Not given. | Recovery. | Hernia was large. |
| 7 | Coley, W. B. (3). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 4 | Right inguinal, irreducible. | Congenital. | "Cecal." | Not given. | Recovery. | Left inguinal hernia also present. |
| 8 | Coley, W. B. (4). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 1 | Left inguinal, strangulated. | Congenital. | Cecum and appendix. | Very much congested. | Recovery. | |
| 9 | Coley, W. B. (5). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 10 | Right inguinal, partially reducible. | Congenital. | "Cecal." | Appendix 4 in. long, and adherent to sac throughout. | Recovery. | Appendix was outlined by palpation before operation. |
| 10 | Coley, W. B. (6). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 7½ | Right inguinal, strangulated. | Congenital. | Cecum and appendix. | Appendix gangrenous and was removed. | Recovery. | Died later from marasmus. |
| 11 | Coley, W. B. (7). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 9 | Right inguinal, reducible. | Not given. | "Cecal." | Not given. | Recovery. | Large. |
| 12 | Coley, W. B. (8). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 4½ | Right inguinal, reducible. | Congenital. | Cecum. | Not given. | Recovery. | |
| 13 | Coley, W. B. (9). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 8½ | Right inguinal, reducible. | Congenital. | "Cecal." | Not given. | Recovery. | Hernia also present on left side. |
| 14 | Coley, W. B. (10). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 8½ | Right inguinal. | Acquired, duration 5 years. | Appendix alone. | Adherent to sac. | Recovery. | Appendix 5½ in. |
| 15 | Coley, W. B. (11). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 4 | Right inguinal, irreducible. | Relapse after operation by another surgeon. | Cecum. | Cecum adherent everywhere, no sac found. | Recovery. | At first operation cecum was found adherent to testicle, which organ was removed. |
| 16 | Coley, W. B. (12). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 6 | Right inguinal. | Acquired, duration 2 years. | Appendix alone. | Adherent by mesentery to sac. | Recovery. | Appendix 5 in. long. |
| 17 | Coley, W. B. (13). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 7 | Left inguinal. | Congenital. | Appendix. | Not adherent. | Recovery. | Appendix 4½ in. |
| 18 | Coley, W. B. (14). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 14 | Right inguinal, reducible. | Congenital. | Cecum. | Not covered by peritoneum posteriorly. | Recovery. | Hernia was large. |
| 19 | Coley, W. B. (15). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 8 | Right inguinal, reducible. | Acquired, duration 4 years. | Appendix. | Adherent, removed. | Recovery. | |
| 20 | Coley, W. B. (16). | Annals of Surgery, Apr. 1895, Mar. 1897. | M., 9 | Right inguinal. | Congenital. | Appendix alone. | Adherent, removed. | Recovery. | |
| 21 | Collier, Mayo. | London Lancet, 1896, ii, p. 1601. | M., 36 | Right inguinal, strangulated. | | Cecum with appendix and portion of ileum. | Cecum adherent posteriorly. | Recovery. | Very large. |
| 22 | Corson, E. S. | Personal com. from Tonngoo, Burmah. | M., 10 | Left inguinal, irreducible. | Congenital. | Cecum and appendix. | Cecum adherent and separated with difficulty. | Death. | |
| 23 | Harte, R. H. (1). | Personal communication. | M., 52 | Right inguinal, strangulated. | Acquired, 35 years. | Cecum, appendix and portion of ileum. | Ileum lay in front and was easily reduced; cecum was very adherent, appendix much inflamed, containing concretions. | Recovery. | Appendix was removed; hernia became suddenly larger and strangulated on day of admission. |
| 24 | Harte, R. H. (2). | Personal communication. | M., 1 6 | Right inguinal. | Acquired. | Cecum and appendix. | | Recovery. | |
| 25 | Halsted, W. S. | Personal communication (1). | M., 8 | Inguinal, reducible. | Acquired shortly after birth. | Cecum and appendix. | Appendix adherent to sac. | Recovery. | Hernia very loose; appendix not removed. |
| 26 | Halsted, W. S. | Personal communication (2). | 3 | Inguinal, indirect, strangulated. | Congenital. | Cecum, appendix and ileum. | Ileum adherent to sac. | Recovery. | Large hernia. |
| 27 | Halsted, W. S. | Personal communication (3). | 1 3 4 | Inguinal, reducible. | Congenital. | Cecum and appendix. | No adhesions to sac. | Recovery. | Large hernia; appendix removed. |
| 28 | Halsted, W. S. | Personal communication (4). | 48 | Inguinal. | Acquired; duration since childhood. | Cecum and appendix. | No adhesions, part of sac formed by meso-cecum. | Recovery. | Very large hernia. |
| 29 | Halsted, W. S. | Personal communication (5). | 35 | Inguinal, strangulated. | Acquired; duration 6 hours. | Cecum, appendix and 3 feet of ileum. | Appendix injured by trauma, which produced hernia. | Recovery. | Appendix removed. |
| 30 | Keetley, C. B. | Med. Press and Circ., 1890, i, p. 85. | F., 53 | Right femoral, irreducible. | Acquired; duration 6 months. | Appendix alone, somewhat swollen. | No distinct peritoneal sac. | | Appendix removed; a portion of hernia reduced before operation. |
| 31 | Knowles, J. H. | Boston M. & S. Jour., 1896, cxxxiv, p. 215. | 3 12 | Right inguinal, strangulated. | Congenital. | Cecum, appendix and small gut. | Contents congested; "stinking pus" in sac. | Recovery. | No perforation of appendix, not removed. |
| 32 | Le Conte, R. G. | Personal communication (1). | M., 49 | Right inguinal, strangulated. | Acquired; duration 32 years. | Large portion of small intestine and appendix. | Appendix adherent at internal ring. | Death. | Appendix not removed. |
| 33 | Le Conte, R. G. | Personal communication (2). | M., 41 | Right inguinal, strangulated. | Acquired; operated on 22 years ago. | Cecum, appendix and small intestine. | | Recovery. | |
| 34 | Le Conte, R. G. | Personal communication (3). | M., 55 | Left inguinal, partially reducible | Acquired; duration 35 years. | Cecum, appendix and small intestine. | Almost universally adherent to sac. | Death. | Adhesions very dense. Dr. LeConte thinks portion of bladder was present in sac. |

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| 35 | Le Conte, R. G. . . | Personal communication (4). | M., 1 2-12 | Right inguinal, reducible. | Congenital. | Cæcum, appendix and small intestine. | No adhesions. | Recovery. | Hernia also on left side, but right was much larger. |
| 36 | Morton, T. S. K. . | Personal communication. | M., 25 | Right inguinal, strangulated. | Acquired; duration 5 years. | Cæcum, appendix and ileum. | . . . . . | Recovery | . . . . . |
| 37 | Paget, Stephen(1) | London Lancet, 1891, i, p. 928. | M., 1 | Right inguinal, strangulated. | Congenital. | Lower part of sac contained ileum, upper part cecum. | . . . . . | Recovery. | . . . . . |
| 38 | Paget, Stephen(2) | London Lancet. 1891, i, p. 928. | M., 3/12 | Right inguinal, strangulated. | Congenital. | Cecum and a very large appendix. | Congestion of appendix. | Recovery. | . . . . . |
| 39 | Paget, Stephen(3) | London Lancet, 1891, i, p. 928. | M., 3/12 | Right inguinal, strangulated. | Congenital. | Cæcum, appendix and small intestine. | Matted together and to sac, parts above much inflamed. | Death. | Perforation of peritoneum, sac filled with fæces; artificial anus made. |
| 40 | Rand, H. W. . . . | Brooklyn Med. Jour., 1893, vii, p. 751. | F., 40 | Right femoral, strangulated. | Acquired. | Cæcum, 6 inches of colon and small intestine. | Bound together, while behind was found the appendix perforated and in cavity filled with pus. | Death. | No concretions. |
| 41 | Roberts, W. O.(1). | Med. Age, Detroit, 1896, vol. xiv. | M., 80 | Left inguinal, strangulated. | Acquired; duration many years. | Cecum and appendix. | . . . . . | Recovery. | . . . . . |
| 42 | Roberts, W. O.(2). | Med. Age, Detroit, 1896, vol. xiv. | M., 56 | Right inguinal, strangulated. | Acquired. | Cecum and large part of ileum. | No adhesions. | Recovery. | . . . . . |
| 43 | Roberts, W. O. (3) | Medical Age, Detroit, 1896, Vol. xiv. | M., 1 | Right inguinal, strangulated. | Congenital. | Cecum and appendix, with pin protruding from appendix. | . . . . . | Recovery. | Pin protruded from posterior wall of appendix which was removed. |
| 44 | Roberts, W. O. . . | Medical Age, Detroit, 1896, Vol. xiv. | M., 5 | Right inguinal, strangulated. | Acquired. | Cecum and appendix. | . . . . . | Recovery. | . . . . . |
| 45 | Roberts, John B. . | Annals of Surgery, 1895, 23, p 611. | M., 60 | Right inguinal, strangulated. | Acquired, duration many years. | Cecum with absence of appendix. | Congenital absence of appendix proved by laparotomy done later | Recovery. | Very large hernia, two operations previously. |
| 46 | Shepard, F. J. (1) | Annals of Surgery, 1892, 12, p. 122. | M., 58 | Right inguinal, strangulated. | Acquired, duration 11 | At upper part of sac a mass of omentum and cecum, latter covered only in front with peritoneum. | Omentum and cecum firmly bound together, portion of tumor returned to abdomen before opening sac. | . . . . . | Thinks this was a double hernia, became suddenly larger 2 years ago, before which time was reducible. |
| 47 | Shepard, F. J. (2) | Annals of Surgery, 1892, 12, p. 122. | M., 3½ | Right inguinal, irreducible. | Acquired, duration 2½ years. | Cecum. | . . . . . | Recovery. | . . . . . |
| 48 | Silcock, A. Q. . . | British Medical Journal, 1888, 1, p. 294. | M., 13-12 | Right inguinal, strangulated. | Congenital. | Cecum and appendix. | . . . . . | Recovery. | Large hernia. |
| 49 | Stevens, W. H. . . | Alabama Medical and Surgical Age, 1893, 4, vi, p. 521. | F., 74 | Right inguinal, strangulated. | Acquired. | Appendix alone, gangrenous, sac filled with pus. | Appendix abnormal at base all around internal ring, thus preventing access of pus to general peritoneal cavity. | Recovery. | Hernia on left side also. |
| 50 | Treves, Frederick | British Medical Journal, 1887, i, p. 582. | M., 41 | Right inguinal. | Acquired, duration 6 years. | Two sacs with common neck; outer contained cecum, appendix and portion of colon and ileum; inner contained ileum. | Cecum adherent to sac, no mesocecum. | . . . . . | Hernia large. |
| 51 | Treves, Frederick | British Medical Journal, 1887, i, p. 582. | F., 56 | Right femoral, reducible. | Acquired, duration 2 years. | Cecum and appendix. | No operation. | . . . . . | Cecum and appendix easily palpated. |
| 52 | Van Hook, W. . . | Medical and Surgical Reporter, 1896, 74, p. 312. | M., 43 | Right inguinal, strangulated. | Acquired, duration 1½ years. | Sac contained large amount of jelly-like amber colored fluid. | Was partly reduced before opening was made. | . . . . . | Proved to be a cyst of appendix, which was ruptured in reduction. |
| 53 | Walker, John B. . | Medical Record, 1897, ii, p. 227. | F., 67 | Right femoral, strangulated. | Acquired, duration 29 years. | Cecum, appendix and ileum. | Gut matted together, but not adherent to sac. | Recovery. | Constriction divided but yet not reduced for several days on account of its congested condition. |
| 54 | Wright, G. A. (1) | British Medical Journal, 1887, i, p. 506. | M., 5-12 | Right inguinal, strangulated. | Acquired, duration 2 months. | Cecum, appendix and portion of ileum. | . . . . . | Recovery. | Operated upon twice previously, same contents. |
| 55 | Wright, G. A. (2) | British Medical Journal, 1887, i, p. 506. | M., 7 | Right inguinal, reducible. | Congenital. | Cecum, appendix and ileum, | . . . . . | Recovery. | . . . . . |
| 56 | Wright, G. A. (3) | British Medical Journal, 1887, i, p. 506. | M., 11-12 | Right inguinal. | Acquired, duration 1 week. | Cecum, appendix and ileum. | . . . . . | Recovery. | Also has umbilical hernia. |
| 57 | Wright, G. A. (4) | British Medical Journal, 1887, i, p. 506. | M., 6½ | Right inguinal, reducible. | Acquired when 7 months old. | Cecum, appendix and ileum. | . . . . . | Recovery. | Large hernia. |
| 58 | Wright, G. A. (5) | British Medical Journal, 1887, i, p. 506. | M., 3-12 | Right inguinal, reducible. | Acquired, duration 2 weeks. | Appendix plainly palpated. | No operation. | . . . . . | Also has umbilical hernia. |
| 59 | Wright, G. A. (6) | British Medical Journal, 1887, i, p. 506. | M., 2 | Right inguinal. | Congenital. | Cecum, appendix and omentum. | Broad band connected appendix with testicle and had to cut before reduction was possible. | Recovery. | Hernia on left side also; contents reducible except appendix, which could be plainly palpated. |
| 60 | Wright, G. A. (7) | British Medical Journal, 1887, i, p. 506. | M., 4 | Right inguinal. | Congenital. | Appendix plainly felt before operation. | Reduction made before sac was opened. | Recovery. | . . . . . |
| 61 | Waring, H. J. (1) | St. Barth. Hos. Rep., 1891, xxvii, p. 180. | F., 46 | Right femoral, strangulated. | Acquired, duration 12 years. | Appendix alone. | Ulcerated and perforated at point of constriction, healthy at attachments. | Recovery. | All symptoms of obstruction were here present. |
| 62 | Waring, H. J. (2) | St. Barth. Hos. Rep. 1891, xxvii, p. 180. | F., 58 | Left femoral, incarcerated. | Acquired, duration 24 years. | Cecum, appendix and portion of ileum. | Congested, no shesions. | . . . . . | Patient's two brothers were ruptured. |
| 63 | DaCosta, J. Chalmers . . . . . | Personal Communication. | M., 41 | Right inguinal, incarcerated. | Acquired (?) when 15 years old. | Cecum, appendix, portion of colon and ileum with a very large mass of omentum. | Contents greatly congested Large bowel was to the outside and behind and was not entirely covered posteriorly by peritoneum. | Recovery. | Dr. DaCosta thinks this hernia was congenital. |

cecum has been dragged down by a pre-existing hernia of the ileum. Given a small cecum, and perhaps one freely movable, and a hernia of the ileum it would seem plausible that some additional muscular effort might produce a hernia of the large gut. Dr. Harte's second case would rather show the reverse of this argument, however, as here the hernia of the cecum undoubtedly ante-dated that of the small bowel, which lay near the internal ring and was easily reduced while the cecum was below and firmly adherent. In several instances the appendix has been found just within the internal ring while the rest of the sac was filled with coils of the ileum; one of Dr. Le Conte's cases illustrates this condition.

Regarding the mobility of the cecum, Treves, by an examination of 100 bodies, has shown it to be very great; in many instances he could make it touch the liver and frequently was able to carry it to any part of the left pelvis. The various positions in which the appendix has been found would tend to confirm this opinion. The question regarding the sac of cecal hernia is interesting; Mr. Treves has done much to convince the profession that the old teaching of absence of sac in these cases is wrong. The idea of complete or partial absence of peritoneal covering in cecal hernia has been traced to Scarpa and it was until recently the prevalent belief. In his examination of 100 bodies Treves found the average distance from the tip of the cecum to the reflection of the peritoneum from the posterior wall of the colon to be four inches. In a very few of the cases here tabulated the sac was deficient posteriorly, but in nearly all there was a complete sac.

Probably the most interesting part of this subject is the condition in which the contents of a cecal hernia are found. In the present list twenty-eight were strangulated, twelve reducible, eleven irreducible, ten not stated, and two incarcerated. It will be observed in looking over these cases that beside the tendency to strangulation the adhesions between the contents and to the sac are more frequent in this variety of hernia than in other kinds. I was surprised not to find a greater proportion of diseased appendices in this condition. Bajardi found the appendix diseased in 30 per cent, which is much larger than is here presented although there will be found in this list several cases of very far advanced disease of the appendix. One of the most interesting cases is that of Dr. Stevens of Cardiff, Ala., in which the sac was filled with pus and the sole occupant a broken-down appendix, which was adherent all round its base to the neck of the sac, thus protecting the peritoneal cavity. Dr. Rand of Brooklyn, reports another case of perforated appendix and pus in the sac. A unique case is the one of Dr. W. O. Roberts of Louisville, in which he found the cecum and appendix in the sac and a pin protruding from the posterior wall of the appendix. A specimen in Guy's Hospital Museum also shows a pin protruding from an appendix which was present in the sac of a hernia. Dr. Van Hook reports the very unusual condition of a cyst of the appendix, ruptured in reduction and the sac filled with cyst contents. Annandale's case is very much like that of Dr. Stevens. He found pus and blood in and around the sac, the appendix being adherent within the neck. It will be observed that inflammation of the appendix has occurred in those instances in which it was alone in the sac, Dr. Rand's case being the only exception. There are several instances in this series where hernia was present on both sides, but, probably the most interesting case of this kind is reported by Broca, who found in the right sac, a loop of the colon, and in the left, the sigmoid flexure, cecum and several inches of ascending colon, and ileum. The presence of concretions and foreign bodies in the appendix are rare in this list of cases, again making a contrast with Bajardi's series. He studied ninety-eight cases and found the appendix inflamed in thirty, containing foreign bodies in eleven, perforated in sixteen, and gangrenous in four. In comparatively few of the present cases was the appendix diseased; its condition is frequently not stated and the supposition is that in these instances it was healthy. Foreign bodies were present in two cases and perforation occurred in five. Before leaving the pathology of cecal hernia two of the cases in this series should be mentioned. One is that of Dr. Bennett of London, who found the cecum to contain a portion of invaginated ileum. The other is one of congenital absence of appendix, reported by Dr. John B. Roberts.

The diagnosis of cecal hernia is very seldom made before the sac is opened, except, perhaps, in children and in old people, where the wall is very thin and permits of palpation of the appendix. Coley has been able to make the diagnosis on several occasions in children, and he and others have been able to reduce all the contents of a hernia except the appendix, which was adherent and could be easily outlined. Several of the cases here tabulated were diagnosed before operation. In nearly all the cases where the cecum was in the sac, the hernia is described as large, and when the appendix alone was present there was usually pain and tenderness.

The treatment of this variety of hernia varies little from that applied to hernia generally, unless in cases where a diagnosis is made, and then I think an early operation should be the rule, because of the tendency to strangulation and disease of the appendix. Particularly is this true where the appendix alone can be felt in the sac and is painful and tender on palpation, because here suppuration is more likely to occur than where other portions of intestine accompany it. The removal of the appendix will depend upon its condition and the attitude of the individual operator toward the general question of its removal.

Of the sixty-three cases here appended thirteen have never before been reported and of the others I have endeavored to avoid any that might be included in other classifications.

324 South 19th Street.

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## CONSERVATIVE SURGERY.

Presented in the Fourth Annual Meeting of the American Academy of Railway Surgeons at Chicago, Ill., Oct. 6-8, 1897.

BY RICARDO ORTEGA, M.D.

CHIEF SURGEON MEXICAN INTERNATIONAL RAILWAY, DIAZ, MEXICO.

The large number of maimed persons I have seen among railway employes, prompts me to make a few remarks with a view to enlisting co-operation in preventing the unnecessary mutilation of the injured.

It is true that we frequently encounter ungrateful patients who blame us because the member we have saved, after toiling with it more than we would have been obliged to do had we resorted to amputation, is not in as good condition as it was before the acci-

dent. Others aver that we are not surgeons if we do not mutilate. This opinion, however, is of no importance when we are conscious of having done our best. It is the better plan to preserve all we can of an injured organism, even at the risk of retaining, for a time at least, that which may ultimately be an encumbrance. I have had cases when it seemed that to preserve an injured member would be useless or a nuisance to the patient. Nevertheless I have, as an almost invariable rule, suggested preservation and results have more than fulfilled my hopes.

Among others, I remember the case of J. Griffin, a locomotive engineer, who had his left elbow crushed. The wound showed a comminuted, compound fracture of the upper epiphysis of the radius and cubit, and lower part of the humerus. Splinters of bone showed through and were extracted from the skin. My colleagues proposed amputation, but I succeeded in having it deferred until it should become absolutely necessary. Such necessity never occurred, for with proper antiseptic treatment, and infrequent, dry dressings the arm was saved, and, later on, the patient became known as one of the most efficient engineers on the road.

In my thesis on soliciting admission to the National Academy of Medicine of Mexico, I referred to the case of an articular gunshot wound. The larger portion of the bullet lodged in the tibio-astragaloid articulation, and the smaller fraction in the soft parts in front of the same articulation. The wound was infected by pieces of sock driven in by the bullet. Yet, at the proper time I extracted the bullet and the patient entirely recovered the use of his feet. I could cite many other cases of similar nature, but I think it will be sufficient to state, that since the year 1888, when I entered the service of the Mexican International Railroad, the only amputations I have been obliged to make have been one forearm at the lower third, one foot at the metatarsus and two fingers.

There is nothing so easy as to thoroughly clean a wound and the surrounding skin. In the case of train and shop men, it is often unnecessary for the washing process to be extra thorough if the skin has been stained with lubricating oil, because, although I have had no opportunity to make a bacteriologic examination of that substance, it is my impression that it has aseptic qualtities, since in nine years practice I have yet to detect a case of poisoning from contact with black oil. Possibly its aseptic qualities are due to its having been subjected for a long time, to heat caused by friction in the machinery. The washing I have mentioned, can be followed by hemostatic treatment, and then cover the bloody surface and fill in the interstices with an antiseptic salve, such as iodoform or salol 5 grams, antipyrin and borate of soda, each 1 gram, and vaselin 30 grams. This has an advantage over powdered iodoform, in that it prevents the gauze and cotton, which complete the dressing, from adhering to the wound, and causing, on their removal, not only considerable pain to the patient, but also tearing of soft tissues and consequent delay in healing.

A crushed member can be kept dressed in this manner for fifteen days or more, if no indications appear that the dressing should be removed. This seldom happens, because the flaps, which may become affected with gangrene, are surrounded by an antiseptic salve which prevents their infecting other parts of the wound. Many of these diseased flaps, which we considered impossible to preserve, surprise us, not only by living, but adhering properly, if we have correctly placed them. Then we may not have to intervene, and if we are obliged to do so, we will find the patient in a better condition, and no longer under the influence of the shock. Before wrapping up the member, we have to remove its extremity if it is only held by a few tendons or a flap of skin or muscle insufficient for nutrition. If we find a stump with a tendency to assume a conical shape we will have to trim it, but all this can be done without risk.

Dr. Paul Reclus, in an able article on the subject, published last year in the *Revue de Chirurgie*, advises the use of bichlorid of mercury and carbolic acid, in small quantities, in addition to the antiseptic salve, and the insertion of gauze in all the spaces. This last suggestion appears very appropriate in cases of large crushed wounds. He ends by saying, "henceforth we shall have no traumatic amputations."

In preserving instead of amputating an injured member, we do a more humane duty, and accomplish a practical purpose. We save the company we work for from payment of a heavy indemnity.

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## A PLAN TO MODIFY THE JAPANESE JINRIKISHA INTO A WHEELED LITTER FOR REMOVING THE WOUNDED IN BATTLE.

BY EDMUND ANDREWS, M.D.

LATE SURGEON OF FIRST REGIMENT, ILLINOIS LIGHT ARTILLERY. CHICAGO, ILL.

Twenty-eight years ago a great industrial revolution occurred in Japan. It was nothing less than a total change in the ancient vehicles employed in the transportation of passengers. Wheeled carriages had seldom or never been used before this. A few officials rode on horseback. The usual plan was for the poor to go on foot and the rich to hire coolies who carried them litter-fashion in sedan chairs and cagos. The cago was a kind of litter suspended to a pole and carried on the shoulders of two coolies. As this is very exhausting labor each coolie carried also a stick as long as from his shoulder to the ground. When they found it necessary to rest they set these sticks upright under the ends of the pole, thus relieving them from the weight. Men of means traveling to a distant destination hired four or six coolies, who relieved each other from time to time. This laborious mode of travel went on for ages. In 1870, twenty-eight years ago, an ingenious man in the city of Tokio discovered the fact that coolies can draw about six times as much weight on a pair of light wheels as they can carry in a cago, besides traveling at twice the speed. This was an astounding discovery in Japan, and the author of it forthwith invented the famous vehicle called the jinrikisha. *Jin* means man, *riki* is power and *sha* is a carriage, literally the man-power-carriage. The Americans in Japan jocosely call it the "Pull-man-car."

It is simply a small chaise with light wheels about forty inches in diameter and drawn by shafts, between which a coolie stations himself instead of a horse. Seizing the shafts he trots off from four to six miles an hour. A fair ordinary day's work is a little less than twenty miles, but in emergencies they will do more. Two of them have been known to take a passenger forty miles in a day. The jinrikisha men are short and very strong and their business develops tremendous muscles in their thighs and in the calves

of their legs. Two of them will trundle a passenger up a high hill without difficulty.

The new invention won a phenomenal success in Japan and drove the old cagos totally out of existence. There are now in the city of Tokio alone over ten thousand jinrikishas.

It seems strange at first glance that European and American armies should still use hand litters exclusively in lugging the wounded from the line of battle back to the ambulances, but there are reasons for it. Up to almost the present time old-fashioned muskets were used, that had only a short range, and the danger belt behind the fighting line was so narrow that the ambulances could be driven up pretty close, enabling the litter bearers easily to bring the wounded to them. The new long-range guns have immensely widened the danger belt, and in level open ground the ambulances and the field hospitals will have to be kept very far back. Now the carrying of wounded men on hand litters is a very severe and exhausting work. Lieut. von Kries of the Austrian army experimented to see how much could be accomplished by the bearers. He found that eight litters carried by thirty-two men (four bearers to a litter as usual) got back only thirty-two wounded to a distance of about four hundred yards in three hours, and they were giving out with exhaustion at the end. Now the ambulances must often be twice that distance away, and in a severe action the bearers would not be able to clear the field.

Now if the jinrikisha idea were modified so as to give us a light pair of wheels with a slender frame, on which an ordinary removable hand litter could be laid with the wounded man upon it, two bearers could trundle the patient back to the ambulances in a very short time with little fatigue. Like hand-litter bearers, they must lie down when the gusts of heavy firing come and get up and move on in the lulls between them. These lulls in the firing will come with the new weapons fully as often as they did with the old ones, thus permitting the removal of the injured to go rapidly on.

This idea is not altogether new. Mr. John Furley, a surgeon in England, devised a wheeled litter a number of years ago. Also Gen. C. H. Thompkins of the United States Army planned another, which was quite ingenious but rather complicated. As the short-range guns were still in use the wheeled litters were not urgently needed and so the idea was dropped. A United States officer explains that the fighting of the American troops at that time was exclusively against the Indians, and carried on in such an extremely rough and broken country that General Thompkins' wheeled litter could not be made available.

To some extent this obstacle of rough country will exist hereafter, as it has in the past, but the great armies of the future will often line up for battle across broad open plains where ambulances can not come near the front, and then wheeled litters will become very necessary assistants in clearing the field of the wounded.

For valuable information on Oriental vehicles I am indebted to a Japanese gentleman, Prof. Massuo Ikuta, of the University of Chicago.

3912 Lake Avenue.

**Cure of Asthma with Serum Treatment.**—Two cases are reported of complete cure of asthma accompanying streptococcus rhinitis, with injections of antistreptococcus serum. This experience confirms Landouzy's assertions that asthma is caused by a toxin, usually tuberculous.—*Presse Méd.*, May 4.

## THE ANCIENT AND MODERN INSTRUMENTS USED IN DIAGNOSIS AND TREATMENT OF DISEASES OF THE ESOPHAGUS AND STOMACH.

Read before the Colorado State Medical Society, June 15, 1897.

BY C. D. SPIVAK, M.D.

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The stomach and esophagus remained a terra incognita with reference to the diseases they are subject to as long as these organs remained inaccessible to direct examination and the application of local remedial measures. The invention of an instrument that possesses both diagnostic and therapeutic virtues has thrown much light into these obscure regions of the human anatomy. The instrument which now supplies the want felt for centuries is the stomach tube. This insignificant looking piece of rubber tubing, which has found a place in the armamentarium of every modern physician, was not born in a day. Like every other instrument, the stomach tube has a history.

*History of the stomach tube.*—The origin of the stomach tube is shrouded in mystery. Who was the first to dare insert an instrument into the esophagus and down into the stomach for some definite purpose we do not know. Was it necessity or curiosity, was it the juggler or the magician who first practiced this art, is equally unknown; it is reasonable to suppose that it was necessity, the mother of invention. We find in Æsop's fables a story wherein the crane is supposed to have used his long beak for the purpose of extracting a bone which stuck in the throat of the fox. Under similar circumstances, man may have used his fingers, or has improvised an instrument to extract a foreign body from his own or his fellow's throat. While performing this primitive operation he may have noticed that irritating the esophagus produces vomiting.

The first mention of a contrivance which may be considered as the forerunner of the stomach tube is to be found in the "Scholia" of Aristophanes.[1] The highly cultured Greeks, in cases of poisoning, introduced a feather into the esophagus and thus produced vomiting. The Alexandrian Meander tells us that the physicians of that period used to produce emesis either by hand, feather or wooden stick.

The Romans went a step farther. Their ideal was to eat well. It seems that they had only one meal a day—from morning till bedtime. In order to escape the evil consequences of an overloaded stomach the last course of every *menu* was a *vomitivum*. The emetic, however, proved at times a troublesome luxury. The dose was too small and an annoying nausea was the result; or the dose was too large and vomiting had no end. They had to give up the vomitivum in disgust, and the noble Romans resorted to their noble fingers as a sure cure for the oncoming dyspepsia. Running the finger down the throat was in most cases sufficient. Some Roman genius invented the *pinna*,[2] made of a bundle of goose-quills which was besmeared with iris oil. The throat was irritated with the pinna until vomiting ensued. Claudius, history tells us, used to have his throat tickled with the pinna by his physician after each meal. He was thus tickled to death by the order of his wife

Agrippina; instead of the iris oil the pinna was dipped in poison.

In the 'Collecta Medicinalia" of Oribasius,[3] a celebrated historian of ancient medicine in the fourth century, we find an exhaustive description of the various methods used to produce vomiting. For instance, the candidate for emesis was laid upon a kind of a hammock which was swung and shaken until an artificial sea-sickness was brought on. The finger comes next in order, the pinna is also mentioned, and a new instrument *digital vomitorium* is introduced. This consisted of a leather glove finger, about ten to thirteen inches long, the lower two thirds of which were stuffed with woolen fiber, while the upper third was empty to receive the directing finger of the physician. Before using, the digital vomitorium was lubricated with the oils. The last named instrument can truly be considered as the primitive stomach tube or stomach sound, judging by its length and mode of introduction. For the tube is based on the same principle as the sound —a contrivance to substitute for, or lengthen, the finger of the operator where the region to be explored is inaccessible.

With the fall of the Roman Empire, gormandism was at an end, and all the methods used to produce emesis were, little by little, forgotten. The noble Romans were glad enough to take food and have it stay on the stomach. The various emetics were used only by medical men in cases of *indicato morbi* or *indicato vitalis*.

Avicenna,[4] in the eleventh century, mentions an instrument *gomor*, made of silk and used in cases of poisoning, "et gomorem in os ejus mittat et ipsum cum instrumento vomere faciat." Mercurialis,[5] who flourished in the sixteenth century, mentions, in his book on poisoning, among other things, *lorum vomitorium*, an instrument known from antiquity, and vaguely described by Scribonius Largus,[6] as far back as the first century. It is supposed by Leube to have been a leather strap treated with nauseating substances, which produced emesis by its nauseating taste, when introduced into the esophagus.

All the above described contrivances had one object in view, viz., to facilitate the evacuation of the stomach contents. Another step toward the perfection of the sound was effected when surgeons attempted to apply it to the extraction of foreign bodies from the esophagus. Both the material and form of the instrument underwent some modification. It was constructed of metal, and the tubular form was for the first time introduced. Arculanus,[7] in 1557, used a short tube made of lead with numerous holes to catch the foreign body when introduced into the esophagus. Ryff[8] (1559) and Scultetus[9] (1679) used a silver tube. Hildanus[10] (1641) was known as an expert in removing foreign bodies from the esophagus by means of a bent silver tube, to the end of which was attached a piece of sponge the size of a hazelnut.

Hieronymus Fabricius ab Aquapendente[11] (1716) made further advance in the development of the sound. In cases where the foreign body could not be extracted from above, he advocated the procedure of pushing the same further down into the stomach by means of a bougie. He used for this purpose a long wax candle, the size of the little finger, which he bent somewhat and introduced into the esophagus.

At the threshold of the new era, the end of the seventeenth and the beginning of the eighteenth century, we find the stomach tube performing a new office, that of direct treatment of the mucous membrane of the stomach. This procedure, which has gained universal adoption only during the last few decades, was known to and practiced by the aboriginal tribes of America. Daper,[12] in 1673, in his ethnographic studies of the South American inhabitants, gives the following account of the treatment of the stomach as practiced by the Tapugas, a Brazilian tribe. "They have a wonderful way of cleansing their belly from the inside. They stick a rope of pladded sharp leaves down their throats until it reaches the stomach, and there they turn and twist it so long until they vomit and spit blood. Hereafter they draw the rope and the belly is cleansed."

About the same time that Dapper published his description of the Tapugas, an instrument became known in Europe which served the same purpose. Judging by the number of monographs[13] written about it, the instrument must have created quite a sensation. The instrument was known under various names—stomach cleaner, stomach scratcher, and stomach brush.

According to Socrates[14] (1713), ab Aquapendente had improvised a stomach sound for the purpose of cleaning the stomach, and some kind of a stomach cleaner was known and secretly used by the fraters of the Italian monasteries. Rumaseus,[15] in 1659, published a pamphlet entitled "Organum salutis," or "an instrument to cleanse the stomach." It was patented by the inventor and was sold extensively in London. His stomach brush was made of a smooth, flexible whalebone from two to three feet long, the lower end of which had a knob-like projection to which a tuft or tassel of silk, cord, or linen was tied. "Those suffering from an excess of mucus in the stomach should introduce the brush and remove the same."

At about the same time the stomach brush was used in France, Norway and Germany. Sorbiere[16] tells of a Provencal who used to push into his stomach a stick of ash-wood three feet long, the lower end of which was in the form of a spoon, and therewith he cleansed his stomach. Pechlin[17] relates that two Norwegian peasants exhibited the trick before the court of Denmark in the presence ot the king.

Leube[18] gives an interesting account of a German ambassador to Russia, who returned from the Moscovite debauches with his stomach completely ruined. He was sent, by the king, to one of the monasteries for treatment. He found the inmates all in robust health. One frater was 115 years old and yet he was able to read and write without the use of spectacles. This gave him courage to undergo the mysterious treatment. He was obliged to donate a large sum of money to the monastery and give an oath not to reveal the arcanum as long as he lived. This arcanum was nothing but a stomach-brush. He was given a goodly dose of brandy, and ordered to lie quiet for a quarter of an hour. Two fraters introduced the brush. He spat, vomited, implored and cursed, but the holy fathers went on with their work of scrubbing the stomach; volens nolens he had to take a large quantity of water and the brush was once more introduced. This time large quantities of mucus, bile, blood, and offensive pus were brought up. After partaking of some chicken broth and an elixir he soon fell asleep. The operation was repeated four times. It was then noticed that the food brought up with the brush was completely digested, with the exception of a few pieces of turkey. The fraters reasoned that there

must be some mucus still left in the stomach, and he had to undergo the ordeal once more. In eight days he was completely cured, and left the institution. For fourteen years he used the brush himself and kept the secret. But to use his own words, "Out of Christian pity to the many sick and afflicted and the consumptive who have lost all hope of recovery" he broke his vow, and stomach brushes were manufactured in Leipsic and elsewhere by the thousands and sold as a cure for all sorts of sicknesses.

Socrates [19] asserted the stomach brush to be a panacea against all ailments emanating from the stomach, and even as a makrobiotic for all who wish to prolong their days upon the earth. "Brushing out the stomach, with an elixir of safron, aloes, and myrrh administered after, protects the body from poisons and pests; brings a good memory, improves the eyesight, etc., improves cold and hot fevers, asthma, mammary abscess, consumption, cephalalgia, apoplexy, toothache, croup, etc." It seems, the author remarks, as if death has laid aside his scythe and taken a stomach brush in his hands.

We possess a drawing of the instrument as given in the writings of Socrates and Heister. It is twenty-four inches long, made of a strong, carefully tempered, double brass rod, covered with plaited silk. At the lower end is attached a round brush of horse hair or goat's beard, which resembles the brushes now used for cleaning lamp chimneys. The modus operandi was very simple. The patient was given a little brandy and a pint of water. The brush was dipped in water and then introduced.

The citizens of Breslau were at one time stomach-brush struck. Thus Kundmann [20] writes in 1737: "There was no beer company at which some did not apply it to themselves after drinking heavily, either the same night or on the following morning, after having snored out their intoxication through the open mouth, if they were distressed with thick phlegm in the throat." "But," the author continues, "since those who have used the tube suffered either from nausea or continuous vomiting, some had hemorrhages, and others could not walk upright afterward, a good many became asthmatic, and a few gave up the ghost, the credit of the tube fell just as speedily as it rose."

I have dwelt at some length upon the history of the stomach brush, because its form, application and the enthusiasm with which it was received, by both the profession and the laity of 200 years ago, must be considered as an important landmark in the history of therapeutics. In an epoch when physicians were almost helpless in the treatment of internal diseases, and when, at best, they had a confusion of pharmaceutic agents whose actions were unintelligible to them at such an epoch, an internal organ was for the first time subjected to local chirurgical treatment, in spite of the conservative objections of the savants of the day.

Leube in his book "Die Magensonde," [18] to which we owe most of our information about the stomach brush, concludes his article as follows: "Nobody will wonder nowadays were the stomach brush to appear in a new and revised edition, and add to our instrumentarium for the treatment of diseases of the stomach. On the contrary I hold it quite worthy of a trial to apply some such instrument, as a therapeutic agent, in cases of neurosis and atony of the stomach."

The prophecy of this great seer of gastrology, uttered some twenty years ago, has come to pass. At the International Medical Congress, held at Rome, in 1894, Dr. Fenton B. Turck [28] of Chicago, presented an instrument which he called *gyromele*, and which is nothing else than the stomach-scratcher of two centuries ago, dressed up in the *fin de siecle* style.

The gyromele consists of a flexible cable to the end of which is attached a sponge covering a spiral spring which can be removed and changed. The cable passes through a rubber tube, and this again is attached to a revolving apparatus for the purpose of producing revolutions of the sponge within the stomach. The gyromele is used for diagnostic and therapeutic purposes. As the evolutions of the gyromele can be readily palpated on the abdominal wall, it is therefore obvious that the size and position of the stomach can be ascertained. It was found by the inventor that the revolutions of the gyromele stimulate the secretion of the gastric juice and, therefore, it can be used as a means of differential diagnosis between functional disturbances and atrophy of the stomach. The adherent material can be removed from the gyromele and subjected to a microscopic, chemic and bacteriologic examination. It can be used as a therapeutic agent in cases of functional anacidity, in mucous gastritis, where simple lavage is not sufficient to remove the mucus adherent to the wall of the stomach, and in cases of neurosis.

To return to the old stomach brush, as might be expected it has fallen into disrepute; physicians have only used it now and then for therapeutic and diagnostic purposes. Thus, Nahuys (1784) [21] reports a case of a neoplasm in the esophagus where the brush was used so as to cause an inflammation and discharge of pus from the neoplasm by the hard friction of the instrument. In the celebrated case of Willis (1673) [22] the patient, suffering from paralysis of the esophagus, used for sixteen years to push the food down with a modified brush; it was made of whalebone at the end of which a piece of sponge was tied. Jobus Basterus (1677), [23] in a case supposed to have been "excrescentia glandulave in œsophago indurato" made the diagnosis by means of the sound, and proved that the esophagus was permeable. Valisnery (1733), [24] used the sound as a dilator in a case of stricture of the esophagus. Van Geuns (1767), [25] in a case of stenosis of the cardia, used a sound with an ivory tip of an oval shape—an instrument used to this day. Abercrombie (1820), [26] used a silver wire, to the end of which was attached an egg-shaped knob, in a case of stricture of the esophagus in which bougies were of no avail.

In cases of impaired deglutition, the question naturally arose how to introduce food or medicine into the stomach. To meet this indication the instrument must assume the form of a tube, the lower end reaching the stomach.

Hieronymus Capivaceus (1598), [29] was the first to recommend artificial feeding in cases of impaired deglutition "*canulam intra gulam immittendam*," which canula was provided with a bulb holding nourishing fluid. By compressing the bulb, its contents was driven through the tube into the stomach.

Fabricius ab Aquapendente [30] was the first to publish a comprehensive account of artificial feeding in cases of lockjaw. He introduced food through the nose by means of a silver bent tube, the lower end reaching above the epiglottis. In order to prevent the fluid getting into the larynx, the lower end of the tube was bent a little forward so that the contents would first

run into the mouth and thence by the act of deglutition be swallowed. Later, he recommended the passage of the tube around the posterior molar teeth.

The next modification that the stomach tube underwent was with reference to its size and the material of which it was manufactured. It became obvious that the tube must be long enough to reach the stomach and must be made of flexible material. The latter requirement was met by the ingenious Van Helmont (1646),[31] who taught how to make catheters from leather. To make a stomach tube it was only necessary to make the catheter a little longer. John Hunter, the father of English surgery, in a lecture delivered before the Royal Society of Sciences, May 20, 1771,[32] advocated among other things the injection into the stomach, through hollow bougies or catheters, such irritating substances as ammonia, turpentine, etc.

The idea of using a hollow sound with a bulb-syringe attachment for the purpose of injecting fluid into the stomach once being firmly established, it was but a natural consequence that the same apparatus, by reversing the valves, should be applied in cases where the withdrawing of the stomach contents is indicated, *i. e.*, as a pump.

The English surgeon F. Bush,[33] was the first to use the stomach tube as a pump in cases of opium poisoning. He injected water into the stomach by means of the bulb, and then by reversing the valves he evacuated the thus diluted poison. One of the earliest descriptions of the so-called stomach pump was given by Dr. Samuel Moore.[34] The credit of the perfected stomach pump as it is used at present belongs to an American, Dr. Wyman[35] of Boston. The elder Bowditch[36] was the first to use it for the evacuation of empyematous collections.

In the second decade of this century various stomach pumps were described, invented, and used by Jukes,[37] Ward,[38] Reed,[39] Weiss,[40] and others. The sounds used in all the apparatus were made of elastic rubber, two and one-half feet long, and one-fourth of an inch in diameter, at the end of which a perforated ivory ball was attached (Jukes), also the same tubes with their ends rounded off, having two openings at the sides (Read and Weiss). Lafarg's[41] esophagus tube had three openings, one at the end and two at the sides.

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## A RECORD OF THE DISEASES OF FIVE HUNDRED AND SIXTY CONVICTS UNDERGOING CELL CONFINEMENT.

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In this paper I have attempted to catalogue the more serious ailments affecting a number of convicts, whom I have had the opportunity to examine on admission and to have under observation for a period of from one to three years. I have excluded those already confined when I entered on my duties and all those who were admitted in the last year of my service, whom I had not sufficient time to observe.

In order to show the effect of confinement, if any, I have divided the whole number into two groups. In Group 1 are convicts under observation for an average term of eighteen months. In Group 2, convicts under observation for an average term of two and one-half years. In the latter group will be found many more of the malefactors who had committed crimes against the person or who belonged to the habitual offenders. There were 260 in Group 1 and 300 in group 2.

It will be noted in Table 1 that three of the thirteen deaths occurred within the first year of confinement, four within the second year and six within the third year; when this is computed on the number undergoing confiement the difference will be found more marked, since there were 560 who served at least one year, while only 300 served more than two years. The rate in the first year is therefore 0.53 per 100, while in the third year it is 2 per 100, or nearly four times as many.

*Tuberculosis.*—Of those who had phthisis on entrance only one died. Of those who on account of marked family history together with an enfeebled physical structure would be inclined to contract phthisis, only one became decidedly phthisical, and one developed scrofula.

Tuberculosis is usually very prevalent in prisons and yet only four of the deaths were from this cause among a population containing seventeen affected on entrance. Of the nine persons apparently contracting the disease during confinement, three died, showing a special virulence. Colored convicts when attacked succumb very speedily. Under proper quarantine for the sick and extra attention to those who are inclined to become affected the mortality from this disease has been lessened in a number of prisons.

*Scrofula.*—There were eight cases on entrance and

HISTORY OF INSANE AND INSANE TENDENCY.

| No. | Age. | Nationality. | Crime. | Family History. | Personal History. | During Confinement. | Termination. |
|---|---|---|---|---|---|---|---|
| 1 | 50 | Italian. | Assault with intent to kill. | Negative. | Depression on head from accident. Is melancholic. | Attempted suicide twice, without success; improved. | Behaved well after; discharged at expiration of sentence. |
| 2 | 35 | American. | Assault with intent to kill. | Negative. | Was an inmate of insane asylum four years before. Has delusions; was commanded by God to assault a stranger. | Delusions continue. | Remanded to insane asylum on expiration of sentence. |
| 3 | 61 | German. | Vagrancy. | Negative. | Apoplexy three years before, causing dementia. Has loud cardiac murmur. Does not understand reason for arrest. | Slightly improved. | Discharged on expiration of sentence. |
| 4 | 34 | American. | Assault on his mother. | Insanity in father and sister. In sister phthisis. | Very intemperate, illusions at times; quarrelsome when drunk; twice in prison for assault on mother. | No signs of mental disturbance. | Discharged. |
| 5 | 19 | American. | Larceny. | Negative. | Is phthisically inclined; has given parents much trouble. | Shortly after admission complained of poison in food; refused to eat; became very debilitated. | Was given in charge of parents in fairly good condition; returned in a few weeks on another charge; delusions absent. |
| 6 | 26 | American. | Larceny. | Negative. | Given to excess in drink and venery. Served four terms in prison for assault and larceny. No symptoms of insanity on admission. | One year after admission delusions of persecution arose which persisted to the end of sentence. | Was discharged not cured. |
| 7 | 31 | American. | Assault and battery. | Bastard. | Intemperance and venery. Seven times convicted for assault and battery. On last sentence developed dangerous delusions and had to be placed in cell by himself. Hallucinations of hearing and delusions of persecution. Has only been discharged two weeks. | Fairly well behaved, but inclined to be bothersome if angered. | Still in prison. |
| 8 | 39 | Negro. | Burglary. | Insanity in father. Phthisis in grandparents. | Excess in drink and venery; has had syphilis; served 4 times in prison within 4 years; believes he is persecuted by officers; talks to himself and is easily angered. | Served his sentence without any further trouble. | Discharged. |
| 9 | 64 | American. | Assaulting officer. Received 7 years for resisting arrest, while stealing some brass to perfect an invention. | Father and aunts insane. | Was hit on the head four years ago with a heavy weight, causing fracture of skull; since then occasional spells of loss of memory; escaped from insane asylum shortly before. Is very emotional, k. j. greatly exaggerated, cries frequently, mind worried, no sleep. | Under nourishment and hyoscyamus great improvement. Is a good machinist; given work at trade; has considerable inventive genius. | Still in prison. Case was considered by lunacy commission as fit for asylum, but advised remaining in prison until the end of sentence. |
| 10 | 30 | American. | Murder. Killed officer while serving term for murder. | Negative. | Symptoms of insanity during confinement; hallucinations and delirium; killed keeper who attempted to quiet him; is ugly and will not speak to anyone; is quiet now without any known delusions. | Remained reticent during the whole three years of my service. No hallucinations; would not speak to me; would eat and sleep regularly. | Transferred to insane asylum, where he was killed the next day in some unknown manner. |
| 11 | 27 | Italian. | Assault with intent to kill. | Unknown. | Has been arrested four times for assault; claims to be the victim of persecution; had delusions and noisy delirium in county prison; apparently sane on entrance. | Shortly after admission claimed relation with King of Italy, protested against being confined; was very noisy at times, singing and shouting; delusions of grandeur persisted after delirium wore of. | Still in confinement. |
| 12 | 19 | American. | Murder. Shot a police officer while resisting arrest. | Persecution. Insanity in mother. | Syphilis two years before; otherwise healthy. | Two years after admission had delusions of persecution and hallucinations, not marked. | Still in confinement. |
| 13 | 28 | Irish. | Assault with intent to kill. | Negative. | Had been acting strangely for several years; irritable; was sane on admission. | Shortly before discharge 2½ yrs. after admission, commenced to refuse food; claimed it was poisoned; became emaciated; under treatment he improved. | Discharged apparently well; few days after ask'd me to have him placed in an asylum; he was afraid of himself; this was done. |
| 14 | 27 | American. | Larceny. | Drink in father. Mental trouble in some of family. | Seven times arrested for drunkenness; has been a tramp for four years. | Delusions of persecution six months after entrance. | Discharged on expiration of sentence. |
| 15 | 33 | Irish. | Murder. Killed a man while drunk. | Negative. | During childhood had fracture of skull, leaving depression. | Suicidal thought, so that he would not commit any more crime; 1½ yrs. later debilitated and an attack of hemoptysis. | Still in prison. |
| 16 | 54 | German. | Malpractice. Abortionist. | Negative. | Well on entrance. | An attack of acute delirium, on the second day of which he killed himself by hanging. | Death. |
| 17 | 53 | American. | Murder. Killed a friend in a quarrel. | Phthisis in mother and sister. | Had syphilis and was intemperate; in army had skull fractured which caused a dementia for one year; drink causes delirium quickly; k. j. greatly exaggerated; pin-hole pupils; is very excitable at times. | Had no symptoms during confinement. | Discharged well after three years' sentence. |
| 18 | 27 | French. | Assault with intent to kill. While in a fit of jealousy shot a woman. | Negative. | Had spinal meningitis eight years before; is hysteric and hypochondriac; imagined he could not walk; after the deed he shot himself in the jaw, causing a fracture. | Behaved well after a short time. Was made cook and performed his duties fairly well, but when suffering with the least pain made much ado over it. | Still in confinement. |
| 19 | 22 | Colored. | Murder. While drunk. | Insanity in father and cousin. Phthisis in mother. | Given to drink and venery; does not know anything about the crime; is very ignorant and dull witted; inclined to phthisis. | One month after, scrofula developed and it was allowed to form a large axillary abscess, which was opened; phthisis then developed and death followed one year after admission. | Death. |
| 20 | 21 | Colored. | Arson. Fifteen years' sentence. | Unknown. | Set fire to barn to see the hay burn, then summoned help; does not know what fifteen years mean; microcephalic; is an imbecile. | Gave no trouble during two and one-half years. | Still in prison. |

eight arising during confinement. Those in whom the disease developed usually gave a history of a previous attack or had suffered from syphilis; nine of the sixteen cases were negroes; in five phthisis was present in the parents and five had syphilis in recent years. In only four was there no evidence of disease in the family or in their own lives. Cod liver oil was found very efficacious in the treatment of the enlarged glands.

*Organic heart disease.*—This seemed to be quite common among the convicts, but whether more so than among adults generally I am unable to say. In 2800 convicts examined by my successor and myself,

organic disease was detected in 3.2 per cent. In the causes of death of 790 convicts, occurring in the penitentiary during 65 years, 5 per cent. are attributed to disease of the heart. In our list, twenty were affected, making 3.5 per cent.; only one of this number died; the majority presented no subjective symptoms and were unaware of the existence of any defect.

TABLE 1.—DEATHS. GROUP 1.

| Cause. | Time served, years. | Condition on entrance. | Diseases during confinement. |
|---|---|---|---|
| Cerebral tumor | 1 1/2 | Scrofula and Syphilis | Pneumonia, purpura rheumatica (died in Philadelphia hospital after an operation on brain). |
| Typhoid | 1/3 | Good. | None. |
| Typhoid | 1 1/3 | Good. | None. |
| **GROUP 2.** | | | |
| Tubere. pulmon. | 2 1/6 | Good. | Pneumonia. |
| Tubere. pulmon. | 1 7/12 | Good. | None. |
| Tubere. pulmon. | 9/12 | Good. | Intestinal tuberculosis. |
| Tubere. pulmon. | 11/12 | Tuberculosis pulmonalis and imbecility. | Scrofular abscesses. |
| Sarcoma of thigh. | 2 | Sarcoma of heel. | Leg amputated. |
| Epithelioma of tongue. | 2 1/2 | Good. | Tumor grew gradually for two years. |
| Carcinoma of cervix. | 2 7/12 | Good. | Noticed only 7 months before death. |
| Typhoid fever | 2 1/6 | Scrofula and syphilis | None. |
| Aortic insufficiency. | 2 | Organic heart lesion, loss of compensation. | Under treatment constantly. |
| Suicide, hanging. | 1 1/2 | Good. | Acute delirium. |

NOTE.—All three cases of malignant growths died after the expiration of sentence, but in so short a time that it is but fair to include them in this list.

TABLE 2.—Diseases on admission of 860 convicts.

| Diseases. | Group 1. | Group 2. |
|---|---|---|
| Phthisis | 8 | 9 |
| Phthisical history in family and tendency thereto | 9 | 6 |
| Valvular heart disease | 13 | 7 |
| Scrofula | 4 | 4 |
| Syphilis (secondary) | 4 | 8 |
| Insanity | 4 | 5 |
| Insane history and tendency thereto | 2 | 3 |
| Locomotor ataxia | 1 | . . . |
| Renal ascites | 1 | . . . |
| Chancroid | 5 | 2 |
| Gonorrhea | 9 | 2 |
| Bronchial asthma | 2 | 3 |
| Pregnancy | 1 | . . . |
| Sarcoma | . . . | 1 |
| General debility | 5 | 8 |
| Hystero epilepsy | . . . | 2 |
| Imbecility | . . . | 3 |
| Simulated insanity | . . . | 2 |
| Opium habitue | 1 | 2 |
| Apparently healthy | 190 | 240 |

TABLE 3.—Serious diseases developing under confinement, in those apparently healthy on entrance.

| Diseases. | Group 1. | Group 2. |
|---|---|---|
| Phthisis | 4 | 5 |
| Scrofula | 4 | 3 |
| Insanity | 2 | 3 |
| Syphilis | . . . | 2 |
| Typhoid fever | 4 | 2 |
| Acute pneumonia | 1 | 1 |
| Carcinoma of uterus | . . . | 1 |
| Epithelioma of tongue | . . . | 1 |
| Abscess | 1 | 1 |
| Debility | . . . | 2 |
| Apoplexy (two attacks) | . . . | 1 |
| Acute rheumatism | . . . | 1 |

*Syphilis.*—Here we have recorded only such cases as manifested the disease in an active state. There were many who gave a history of having suffered from the disease in years gone by, but seemed free from all symptoms at the time of examination. Many had suffered from gonorrhea and other venereal diseases at the time of their arrest, but had been cured in the county prisons before reaching the penitentiary. This probably accounts for the fact that I have never observed a case of delirium tremens or any great discomfort from the withdrawal of alcohol in prison, in persons who were chronic drunkards outside.

I have only attempted to note the more serious illnesses here. There were numerous demands upon the physician for treatment for intestinal trouble and bronchial affections such as ordinary diarrheas and colds.

The insane element has ever been an interesting topic and especially in this particular prison, where the method of confinement has been wrongfully accused of causing the insanity. I have dealt with this subject elsewhere to which those interested are referred.[1] I have however noted here, somewhat in detail, the kind of individuals received and the character of the insanity.

In this paper I have drawn no conclusions; it is simply a contribution of facts to the study of convicts, hoping that others might be stimulated to furnish statistics relating to the health of different groups of individuals observed for a like period of time. The ordinary reports of prisons and asylums relate to a constantly fluctuating population. Here I have tried to show the condition of the individual on admission, and the serious diseases he has been subject to during a certain time, and again I have grouped a number of individuals together all serving the same length of time and compared them with another group serving a different length of time. True, these statistics relate to convicts undergoing a particular method of imprisonment and can not, therefore, be applied to convicts in general without further study. If a similar statement could be had from Auburn or Sing Sing prison some comparison as to the effect of the two methods, cell and congregate, on the health of convicts might be made.

## TUBERCULOSIS; ITS SEED, ITS SOIL AND ITS TREATMENT BY MEDICAL ASEPSIS.

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In the consideration of this subject we will endeavor to simplify it as much as possible, giving it a novel presentation so that its general conception may become clearer and more easy of comprehension. There is no special advantage in clothing and often obscuring our ideas in ultra scientific verbiage. Common sense is what we want in medicine as elsewhere, and the practical aspect of the healing art must not be lost sight of and forgotten in the fogs of hair-splitting laboratory work. Micro-organisms are but a part of medical science, but they have of late engrossed our attention to the exclusion of other and important factors in the production of disease.

In all the long history of that eternal war which man is waging more or less successfully against disease and its consequences, no phase of the conflict is of such vital importance to so many individuals as that which relates to the diseased condition of the human body, generally known as tuberculosis. Great epidemics of cholera, yellow fever, the plague, or the black death, from time to time, overshadow it in interest and public attention, but when we consider that, notwithstanding these more conspicuous causes, it is to tuberculosis alone that one-fifth of all the deaths upon this planet is said to be due—that in the United

[1] "Insanity Among Convicts;" Journal of American Medical Association, Vol. xxi, No. 13. Medical Reports of Eastern State Penitentiary for 1892-93-94. "Tuberculosis in Prisons;" Proceedings of National Prison Association for 1894.

States it is estimated there are nearly five hundred fatal cases every twenty-four hours, we may in some degree realize how much more we have to dread from this insidious and ever active foe of the human race than from those the possible mention of which as possibly approaching our shores is the signal for wild alarm.

The subject is also specially interesting because of the very remarkable revolution that has taken place in the ideas entertained by medical men as to its cause and treatment—a revolution modern in its origin, and by no means ended. Less than a generation ago, tuberculosis was believed to be hereditary, and in such cases not to be prevented; it was thought to be contagious; it was practically regarded and treated as incurable. Today the best medical opinion does not consider it hereditary, nor contagious, that is, from personal contact, like smallpox or measles, nor incurable. It is infectious under certain conditions.

There is no doubt but that it can be prevented, even where there is a hereditary weakness which predisposes to the disease; there is positive proof that it can be, and is daily being cured, except in advanced stages.

In the treatment of tuberculosis and in the light of modern theories, the truth of which, since the discovery of Koch, announced in 1882, no longer remains to be demonstrated, two things are to be considered; 1, its seed; 2, its soil. Without seed there is no crop. Thanks to the spirit of modern investigation and research, the seed of tuberculosis has been defined and described until there is no more doubt as to its nature and characteristics than there is about a grain of wheat. Without entering into the unprofitable and probably unanswerable problem of where this seed first originated, bacteria or germs generally are coeval with the first appearance of organic life on the earth. It is now believed to have no breeding place in nature outside of men and animals, and their secretions. Developed in the lungs of a tuberculous patient, discharged in the sputum that comes so freely from the affected source, the tubercle bacilli go forth upon their mission in numbers beyond the conception of mathematics to compute. It is estimated that 5,000,000,000 may be contained in a single drop of water. So long as moisture is maintained they can not escape, but when dried without exposure to the sun they will retain their pernicious and virulent activity for months, and are easily set in motion—each one a living thing. Freezing does not effect them; the gastric juice does not kill them, and burial in the earth does not destroy their vitality.

When we consider the number of individuals who are more or less affected with this disease, that they are to be found in all classes of society and all parts of the world, that they are coming and going in public conveyances, and frequenting public places, that they are expectorating right and left, and that each deposit contains millions of bacilli, waiting to be taken up on the wings of the wind and carried wherever air permeates, we can realize the hopelessness of escaping their all but omnipresence. And yet we see boards of health acting under advice of those who surely have not given the subject all the study it deserves, suggesting well-intended but pitifully inadequate methods to exterminate the bacilli, by passing ordinances against public spitting—without doubt a beneficial measure—and some have even gone so far as to recommend the compulsory isolation of all persons affected—a plan that would be cruel in many cases, if it were generally practicable, which it certainly is not. Every movement in the interest of purer air should certainly be encouraged, and public cleanliness should be made imperative, but if the eradication of tuberculosis depends entirely upon the enforcement of such measures, we shall wait a long time before it will become as rare as leprosy is now in the United States. The seed of tuberculosis does not always sprout where it falls; if the tubercle bacillus attacked everyone exposed to its influence, the race would have been exterminated ere this.

Not only seed, but soil, is essential for the crop. As in agriculture, so in pathology, the right seed is no more essential to a crop than is the proper soil. You may sow wheat in Broadway every day for 100 years, and wait as much longer for a harvest. The germ is there; under the proper environment of earth and moisture and protection, it will sprout and grow, but lacking these, it comes to naught. Just so with the bacillus. If the soil for it is fertile, it will do its deadly work; if sterile, it will just as surely fail. In the sterilization of the soil into which the tubercle bacillus enters, rather than in seeking to escape its presence altogether, lies the hope of the consumptive.

How shall this be effected?

Life is much the same no matter where we find it. In biology, a sharp line of demarkation, separating animal from vegetable life can not well be drawn. The physiology of man and of plants are much alike, in many ways almost identical. The same causes operate to produce disease and death in both. The bacillus is not the primal factor, but is always secondary to the malnutrition and uncleanliness. The earth makes the sap, and the sap makes the plant—the food makes the blood, and the blood makes the body. If the earth ceases to nourish the plant, away at the top the leaves begin to wither and die; if the food ceases to nourish the body, the lungs, which are to man what the leaves are to the plant, begin to fail. Just as it is the yellow, sickly leaf that is attacked by germs, which upon the green and vigorous growth have no effect, so it is in the weak unnourished and impoverished lung, that the tubercle bacillus finds the soil it needs. The tubercle bacillus is therefore one of the bacilli of decline and decay.

Tuberculosis is not a disease of the lungs alone, although it is in the lungs that the decline of the system often makes itself most prominently manifest; it is in the lungs, or other parts affected, that the bacilli, acting under the great and beneficent law of nature, which thus provides for the disintegration and return to dust of that which has passed its usefulness and lost its vitality, begin and carry on their mission. As this disintegration progresses, the soil becomes more and more fertile, and there is more of it. Unless this decline can be stayed, unless the diseased and decaying tissues can be cleansed and vitalized, or sterilized, and fitted to withstand the ravages of the rapidly increasing germs, there is positively no hope for the patient. To check the deterioration is the first step in the restoration to health,

What course of treatment is then indicated?

The answer is simple, as truth is always simple. Purify and strengthen the system.

It is a fundamental principle of surgery and external medicine that nothing is so conducive to the healing of external wounds and diseases as perfect cleanliness. If the lungs are to be cleansed and if internal

surfaces are be healed, why not adopt what is in effect a similar treatment? The natural sluiceways of the body furnish the channels; the eliminatives provided by the skilful physician furnish the means not only of cleansing the stomach and the digestive tract generally, preparing it for better and more effective work, but filtering through the whole system these best of remedial agents find their way eventually to the kidneys, bowels and pores of the skin, which, carefully kept open by the ingestion of hot water in sufficient quantity, warm baths, massage and gentle systematic muscular exercise, eliminate the disease wherever it is possible.

Equally important is it to strengthen the system by the careful selection and use of foods. There is truth underlying the saying that, "if you take care of the stomach, the lungs will take care of themselves," and in the building up of the body it is imperative that the digestive organs should be in a normal and healthful condition, and be stimulated to increased activity by proper strengthening exercise systematically carried out under medical direction. We see the value of this method in the training of the athlete, or even the race horse. The physiologic law that exercise strengthens, and that all development is of gradual growth, must be considered in connection with the fact that about all the body, except the frame-work, the padding and the nervous mechanism is muscle, and most of the organs, including the lungs, functionate only through muscular activity. Therefore, the great importance of strengthening the voluntary and involuntary muscles by exercise and proper diet and regimen is apparent. This must not be lost sight of in the treatment.

By internal cleanliness, blood-washing and by elimination, we cleanse the tissues; by improving the nutrition, we increase the germicidal power of the blood and the vitality of the body. The presence of fermenting or festering materials within the body is the cause of many of the symptoms we call disease. The removal of them by the eliminatives is medical asepsis. This may not be always easy to accomplish, but this is the direction in which our efforts should be applied, and this is a method that should be used in the treatment of many diseases of bacteriolgic origin. In the treatment of surgical diseases, what would we think of a man who did not believe in surgical asepsis, that great principle which holds good in all surgery. In medicine, which can not in treatment be separated from surgery, each one treats pneumonia, typhoid fever, scarlatina, phthisis, etc., according to his own ideas and without any great underlying principle of medical asepsis. It is simply a case of do as you think best or do nothing, the so-called expectant plan of treatment, and the results are correspondingly various.

Medicine and non-operative surgery, as is now well understood, have no sharp line of separation. The same principles in treatment, I claim, hold good for both. The more we can simplify these and thus make them easily understood, the better it will be for the medical profession and their patients.

Many plants in their sap, or blood, as we might term it, have a material that is noxious to low forms of life. We see this in their products, belonging to the carbolic acid series, the salicin from the willow bark, quinin from cinchona bark, etc. And so it is with the sap or blood of the healthy animal body. Would not this principle, in a measure, account also for the efficacy of the serum or antitoxin treatment? The fresh serum, like that of Maragliano, containing the germicidal principles of healthy blood is poisonous to the germ life developing in the exhausted, devitalized tissues of the patient.

## MALARIA.

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It is said that one-seventh of the human race perishes of tuberculosis—a fearful mortality—but thanks to modern investigation, this enormous death-rate will be greatly reduced. Of even greater importance to humanity is malaria. It stands as an insurmountable barrier to the occupancy and civilization of a large part of the globe. Immense countries, fertile in soil and rich in countless natural products, otherwise capable of supporting a dense population, are lost to the aggregate wealth of the world because of malaria alone. The plasmodium malariæ is a tropic plant. It requires abundance of moisture, fertile soil and heat. Where the jungle is impenetrable, where dense forests struggle upward and shut out the light, where fierce storms and unbearable sunshine divide the equatorial day, the conditions of its existence are perfect. It is hard for us of the North, accustomed to the disease in its milder manifestations, to realize what a deadly scourge it becomes beneath a tropical sun. In the immense basin of the Congo and its tributaries, and in that of the Amazon in South America, the disease is seen at its worst. It has caused more human misery and suffering than any other one entity.

It is impossible to say at what period malarial fever was differentiated from other febrile disorders. Writers of antiquity have described the disease sufficiently well to show that they were perfectly acquainted with its clinical features. Certain it is that it prevailed very severely in ancient Rome, owing to the climate, the proximity of marshes and absence of sanitation. The fact that the Romans had a god "Febris," and a god "Mephitis," who presided over noxious exhalations, would seem to indicate a suspicion at least of cause and effect. It was late in the seventeenth century, however, before the true conditions were approximately understood. Even then, and for long afterward, exhalations, or impure air, or gas arising from marshland under a hot sun, constituted the supposed cause. Gradually the opinion obtained that the cause was a tangible one. Constant search was made for years by careful microscopists for the supposed bacillus. Announcements were made from time to time that the search had been successful, only to be controverted later on. Like an illusive "will o' the wisp" the little intruder had eluded their eager grasp.

It remained for Laveran, in 1880, to show the cause to be an actual organism—the plasmodium malariæ. Subsequent observation has confirmed the accuracy of his claim. The matter may be considered as definitely settled. The life history of the plasmodium outside of the human body is still unknown. The universality of its distribution and rapidity of its development would indicate that it is easy of propagation. It is, however, a hot weather organism, and two weeks are required, other conditions being favorable, before the germs are produced in quantity sufficiently great to poison the air. It nearly always gains access to the human organism by inhalation. After having

effected a lodgment, it attacks the red blood cells. As it grows it it causes a separation of the hemoglobin, and destroys the cell by segmentation. Spores are then liberated that in turn attack new cells, and thus the cycle goes on. From the time the cell is invaded by the plasmodium until its complete destruction, is but a few hours. It will thus be seen why profound anemia so soon ensues. The cells are destroyed much faster than they can be produced. The "chill" corresponds in time with the liberation of a new crop of spores, either by reason of the spores themselves, or of ptomains that are liberated at the same time. The liver and spleen, especially the latter, become enlarged sometimes enormously. The enlarged spleen may persist for years, or for life. The enlargement is caused by the deposit of separated hemoglobin, and the irritation incident thereto.

It does not effect man alone, animals also are attacked. Horses in India die of it. Stanley relates that the donkeys used to carry burdens in the Congo country were susceptible. It is of interest to note that Stanley's negro carriers were invariably attacked with malaria when taken into a strange locality, although that locality was not more unhealthy than the one from which they came. He also relates that getting wet, either by fording streams or by the rains that are so heavy in the African tropics was sure to cause an outbreak of ever. Among the farmers of our own country an attack is often precipitated by working in corn or other crops early in the morning while still wet with dew. The "old settler" in Indiana remains in bed until the sun is up.

Many conflicting traditions exist in regard to the discovery of the medicinal property of cinchona bark. It is named from the Countess of Chinchon, wife of a Spanish governor of Peru, who upon her return to Spain brought with her a quantity of the bark. It is maintained, erroneously I think, that the natives of Peru were cognizant of its febrifuge properties. After carefully investigating all the old stories connected with its early history, it seems reasonably certain that the discovery was made by the Jesuits. The Jesuits followed closely upon the footsteps of the armed men who over-ran this country shortly after its discovery; very often they were themselves the pioneers. They were men of considerable attainments in the natural sciences, and some were good botanists. While preaching the Cross, they made a study of the natural products of the new continent. The bark was brought by them to Rome in considerable quantities, about 1630, and introduced widely through members of the order. Hence the name "Jesuit's powder." The source and identity of the drug was maintained as a secret at first. Mystery adds to the zest with which the general public hails a new "cure" even now, but in the seventeenth century it was infinitely more true. The attitude of the medical profession to the new remedy is not a matter of which we may feel proud, although to our credit be it said, that among the physicians at that time whose achievements in other lines have brought their names down to us, the new remedy found support. Among them was Sydenham. The large quantity necessary to be taken as a dose was objectionable. In 1820 this objection was removed by the separation of the alkaloids by Pelletier and Caventou. The four alkaloids quinia, quinidia, cinchona and cinchonidia possess nearly equal antiperiodic powers. From force of habit probably, quinia is the one usually prescribed. Extensive and careful experiments made in India a few years ago in the British army, with the view of determining the relative merit of the alkaloids showed very little or no difference.

It soon became evident that the trees in their native habitat were doomed to early destruction. The demand for bark was great; the trees were felled, stripped and destroyed. Much wastefulness prevailed.

The English anticipated this condition of affairs by putting out large plantations in India; choosing situations that in altitude, temperature and humidity closely simulate the conditions that prevail in its Peruvian home. The experiment has proved a successful one. It is a curious fact that the yield of alkaloids is increased 10 per cent. by wrapping the bodies of the trees with cotton or other loose substance for some time before they are "barked."

The treatment of malaria consists in giving one of the alkaloids of Peruvian bark. It is immaterial which one, provided it is given in doses sufficiently large, say 0.15 to 1.3 grams twice a day. Two large doses each day is better treatment than small doses given at shorter intervals. A full dose of opium should be added to each dose of the antiperiodic. Opium possesses decided antiperiodic properties. It also conduces to the patient's comfort. The bowels should be moved twice or thrice daily, that the debris of disintegrated blood cells and ptomains may be eliminated. A very useful agent in the treatment of malaria is Warburg's tincture. Two preparations are on the market, one with aloes and one without. The one with aloes is to be preferred. It is the best agent with which to keep the bowels open. It should supercede calomel. Especially is it useful if there is jaundice. It is an excellent prophylactic. Added to the headache and lassitude present when malaria is impending, there is often some jaundice observable about the conjunctiva, a peculiar "muddy" color of, and bad odor from the skin, and constipation. The alvine discharge is ash colored or white. The biliary secretion is decreased. It is in cases of this type especially that Warburg's tincture is useful. It should be given in doses sufficiently large to freely move the bowels, and continued in doses such as will keep them open. As the Warburg's tincture contains only 0.65 grams of quinin in 31 grams of the mixture, there should be given in addition two 0.32 gram doses of quinin daily. The disagreeable taste of quinin makes it objectionable to children. This difficulty can be obviated by administering quinia glycyrrhizin—a chemic union of quinin with glycyrrhizin. This salt is practically tasteless, and is soluble in water or syrup. The quinin combines with the glycyrrhizin in such proportion that four times as much should be given as of the sulphate.

In this latitude it is never necessary to give quinin hypodermically. In the South it is often demanded. If the case is very urgent, or a congestive chill is impending, it should be given hypodermically, notwithstanding the fact that this form of medication will in all likelihood be followed by abscess.

If the temperature is not very high the sponge bath, given frequently, will suffice as an antiphlogistic measure. Should it be necessary, acetanilid in 0.32 gram doses may be used as additional means for reducing temperature. Refrigerant drinks are also useful, as lemonade or "lime-juice and pepsin."

During convalescence the patient should have an abundance of food that is nourishing and easily assimilated. He should also have some ferruginous preparation, as the ferrous carbonate. After convalescence

is thoroughly established, quinin may be discontinued and tinctura cinchonæ compound given instead.

Continued fevers, that are not typhoid, are often encountered in malarial districts, over which quinin seems to exercise no influence. They can not be classified as "irregular" malarial fevers for this reason, and because an examination of the blood does reveal the plasmodium, either in its regular or irregular (æstivo-autumnal) form. They are probably caused by an organism different from but closely related to the plasmodium.

For the enlarged spleen but little can be done by medication. Time will help the matter somewhat.

For chronic malarial poisoning a change of residence, either temporary or permanent, to a colder climate is demanded.

## INFLAMMATION OF THE UVEAL TRACT, CONSIDERED IN ITS ANATOMIC RELATIONS.

Read before the McLean County Medical Society, May 5, 1898.

BY J. WHITEFIELD SMITH, M.D.

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BLOOMINGTON, ILL.

The choroid, ciliary body and iris, taken together, form the middle tunic of the eye, and is called the uvea or uveal tract. This may be considered embryologically and histologically, as forming a continuous membrane. If we remove the conjunctiva, sclera and cornea from the globe of the eye, and evacuate its contents—the aqueous humor, lens, lens capsule, vitreous humor, and detach the retina from the choroid—we shall have left, depending upon the optic nerve, the uvea. It gets its name from its fancied resemblance to a grape hanging upon a vine (uva). The microscopic anatomy presents a striking similarity throughout its entire structure. There are, however, some variations, which may be noticed before considering the inflammation in its respsctive portions. Beginning with the choroid *in situ*, we find that it comprises the posterior section of the uvea, extending from the aperture of the optic nerve to the ora serrata. At the optic aperture its termination is marked by a delicate ring of cellular and elastic fibers surrounding the nerve and firmly adhering to the sclera. Also, a few fibers are sent to the neurilemma of the optic nerve and to the lamina cribrosa. At the ora serrata the choroid is continued into the ciliary body. The termination of the choroid proper at this point, is marked by the limiting denticulated border of the retina which underlies it.

The choroid is situated between the sclera and the retina, and is essentially a vascular body. It is composed of four layers: The suprachoroid or lamina suprachoroidea is the outer layer and forms the attachment to the sclera. It is a non-vascular membrane, containing pigment and lymphoid cells. The next layer is the layer of large vessels, consisting principally of veins which communicate freely with each other. The spaces between the veins contain pigment cells of a brown color. The arteries lie on the inner side of the veins. The layer of medium sized vessels forms the next layer and it is but slightly pigmented. The small blood vessels or the layer of capillaries (tunica Ruyschiana) constitutes the next vascular layer of the choroid. These are closely packed together and contain no pigment. The lamina vitrea forms the inner coat of the choroid; it is also devoid of pigment cells. The framework uniting the vessels of the choroid is composed of delicate connective tissue.

The arterial vessels entering into the formation of the choroid are the short posterior ciliary arteries. These are about twenty in number and are derived from the ophthalmic artery. They pass through the sclera in a whorl or circle, close to the optic nerve, dividing into branches and passing forward for some little distance, where they change their course obliquely inward, terminating in the capillary layer. The venous system lies on the outside of the arteries and is arranged in curves (vasa vorticosa). They unite, forming four or five principal trunks, which pass through the sclera about half way between the corneo-scleral margin and the optic nerve.

The nerves of the choroid are branches of the ciliary, about fifteen in number. These are derived from the ciliary ganglion and the nasal branch of the ophthalmic division of the fifth nerve. They pass through the sclera near the optic nerve entrance, passing forward between the choroid and sclera, lying in immediate contact with the former, and partly imbedded in grooves, on the inner surface of the latter. They send branches into the choroid, in which they form a gangliated plexus.

The continuation of the uveal tract from the ora serrata to the peripheral or attached border of the iris is known as the ciliary body and consists of two portions, the ciliary muscle and the ciliary processes. The ciliary muscle is composed of two kinds of fibers, which accordingly divides it into two portions, the longitudinal or meridional fibers (Brucke's portion) and the circular fibers (Muller's portion). The ciliary processes consist of duplications or folds of the choroid. There are about seventy in number, arising near the ora serrata and extending forward to near the equator of the lens. They are arranged parallel with the meridians of the eye. The framework of the ciliary processes is of connective tissue. The ciliary processes are the most vascular part of the eye. They are covered on their inner surface by three layers—the hyaline lamella; a layer of pigmented cells, the pigmented epithelium; and a row of non-pigmented cylindrical cells. The last two rows of cells are a continuation from the retina and are called pars ciliaris retinæ. The blood vessels of the ciliary processes are derived principally from the anterior ciliary arteries, five or six in number. These arteries are supplied from the muscular and lachrymal branches of the ophthalmic artery. Perforating the sclera near the sclero-corneal margin, they divide into branches supplying the ciliary body, and assist in forming the circulus arteriosus iridis major.

The venous system is in connection with the vasa vorticosa. The nerves of the ciliary body are derived from the ciliary nerves, which form a dense plexus in the ciliary muscle; some fibers from the trigeminus also supply the ciliary body.

The portion of the uvea remaining to be considered is the iris. This springs from the anterior surface of the ciliary body. The stroma composing the iris consists of a connective tissue or cellular mesh work, containing numerous vessels and some pigment cells. Near the pupillary border of the iris on its posterior surface is a narrow circular band of muscular tissue

(sphinter pupillæ) whose function is to close the pupil. Also close to the posterior surface, beginning at the ciliary margin, the dilator fibers are found (dilator papillæ). The anterior surface of the iris is lined with an endothelium. This is a continuation of the endothelium of Descemet's membrane. The posterior surface of the iris is lined with a layer of pigment epithelium (pars iridica retinæ) and is continuous with the retinal pigmentary layer. The blood supply of the iris is derived mainly from the long posterior ciliary arteries, two in number. These arteries enter the eye near the optic nerve entrance, passing forward between the sclera and choroid. Each artery divides into an upper and lower branch just behind the peripheral border of the iris. The branches run concentrically with the margin of the cornea, uniting with the branches on the opposite side, forming the large arterial circle (circulus arteriosus iridis major). Near the pupillary margin they form by anastomosis the small circle (circulus arteriosus iridis minor). The long posterior ciliary arteries are branches from the ophthalmic. The venous system of the iris has a corresponding arrangement with the arteries. There is a communication between the canal of Schlemm and the veins of the iris. The nerves of the iris are the ciliary. They follow the course of the blood vessels and send off numerous anastomosing branches. Their termination is probably in the muscular tissue of the iris.

I have reviewed the anatomy of the three portions of which the uvea is composed in order that we may more fully appreciate the likeness and the differences of its structure throughout. It may be summarized thus:

UVEAL TRACT.

| Choroid. | Ciliary body. | Iris. |
|---|---|---|
| Framework consists of a delicate connective tissue. | Same. | Same. |
| Consists largely of blood vessels. | Same. | Same. |
| Contains numerous pigment cells, brown. | Same, black pigment. | Same, light or dark pigment. |
| Nutrient function; furnishes nourishment for the retina, vitreous and lens. | Same, ciliary processes; furnish nourishment for vitreous and lens. | Same; assist in furnishing nourishment to vitreous and lens. |
| Nerve supply; the ciliary nerves. | Same. | Same. |
| Muscular elements, absent. | Ciliary muscle. | Sphincter pupillæ and dilator pupillæ. |
| Blood supply; short posterior ciliary arteries, mainly. | Short anterior ciliary arteries, mainly. | Long posterior ciliary arteries, mainly. |

Aside from the muscular elements which enter into the structure of the uvea, the chief differences are in the blood supply to the different parts. In the study of the inflammations affecting the uveal tract, we may understand from this the reason for the characteristic differences in the clinical phenomenon presented.

An inflammation originating in the choroid, chroiditis, is usually limited to the posterior portion of the uvea—the choroid proper. It is not apt to pass over to the ciliary body and the iris. This is especially true of the exudative or non-suppurative form. The question may be asked, why this is the case, since the uveal tract is essentially a continuous membrane and so similar in structure throughout? I think the difference in the blood supply to this portion furnishes the answer. We might reasonably expect, but for this reason, that the inflammation would be continued forward by continuity of tissue. In the suppurative forms of choroiditis, the ciliary body and the iris become involved (irido-choroiditis), but the extension seems to be due to the violence of the inflammation, and probably to pyogenic infection, producing, in many cases, panophthalmitis with subsequent shrinking of the globe (phthisis bulbi). Again, an inflammation originating in the anterior portion of the uvea—the iris (iritis), is not so likely to be transmitted to the choroid, for the same reason. The blood supply to the iris is almost independent of that of the choroid.

An inflammation of the iris may be confined entirely to the structures of which the iris is composed. It is, however, very frequently accompanied by an inflammation of the ciliary body (irido-cyclitis). This may be accounted for by the fact that the blood supply of the two portions of the uvea, is in part, from a common source. The blood passing through the two long posterior ciliary arteries is distributed almost entirely to the iris. It is true that the circulus arteriosus iridis major is in connection with the anastomosing branches of the anterior ciliary arteries, and that the major circle sends some branches to the ciliary muscle, and in this way there is a connection between the iris and ciliary body in their blood supply, as well as in their anatomic elements. An inflammation beginning in the iris is less liable to be extended to the ciliary body than one originating in the ciliary body, is to be transmitted to the iris. This is probably due to the complexity existing in the blood supply to the respective parts. As we have already seen, the five or six anterior ciliary arteries enter the globe about two millimeters behind the sclero-corneal margin, where they divide into branches, and supply the ciliary processes, and join the major circle. Hence, the iris is somewhat freely supplied by the branches of the anterior ciliary arteries, more so, perhaps, that the ciliary body is supplied by the two long posterior ciliary arteries. Also, numerous small vessels extend from the ciliary processes to the iris, supplying the latter. In the consideration of inflammation affecting the middle portion of the uvea—the ciliary body—it is authoritatively stated that "simple cyclitis, without iritis, occurs but seldom and that only in the chronic form." I think the blood supply to these parts accounts for this. There seems to be a more intimate and intricate connection in the blood supply from the ciliary body forward to iris than exists between the iris and the ciliary body in a posterior direction. It may be further noted that an inflammation arising in the ciliary body is not so liable to be extended to the choroid as it is to the iris, and for the reason already given.

There are other factors that chiefly determine the tissue alterations in an inflammation of the uveal tract. Among them may be mentioned the distribution of the lymph channels and lymph spaces. Lymphatic vessels do not exist within the globe of the eye. Lymphoid cells are found in the lamina suprachoroidea, and a lymph space is located between the sclera and the choroid. This lymph space is in connection with Tenon's space. The distribution of the lymph in the region of the choroid is through the posterior lymph passages, in the direction of the optic nerve. The lymph collected in the anterior part of the eye, in the region of the ciliary processes and the iris, passes through ligamentum pectinatum, through Schlemm's canal, and finally is distributed to the anterior ciliary veins. Thus the lymphatic arrangement and circulation becomes an important element in considering inflammations in the different portions of the uvea. The chief thought which I wish to emphasize is that the blood supply to the

various portions of the uvea is a predominating and determining factor in the limitations and complications of an inflammation affecting the uveal tract. The complexity of the blood supply to the choroid, ciliary body and iris makes it all the more difficult to apply general statements to this etiologic factor in inflammatory processes. However, regarding the blood current as a conveying medium in inflammation of the uvea, I think that the course and the clinical phenomena are all the more easily interpreted by directing our attention to the blood supply of the respective parts.

An area of inflammation may be limited or confined to the part in which it originates. This is rendered more probable in proportion as the blood supply is less complicated with other portions. It may also be extended to all portions of the uvea, in which case the inflammatory process will be largely influenced in the directions, relations and in conformity with its vascular connections.

A very close sympathy must always exist among the component parts of the uvea in pathologic changes of any portion of its anatomy.

## A CASE OF ANEURYSM OF THE LEFT VENTRICLE.

BY ERNEST B. SANGREE, A.M., M.D.
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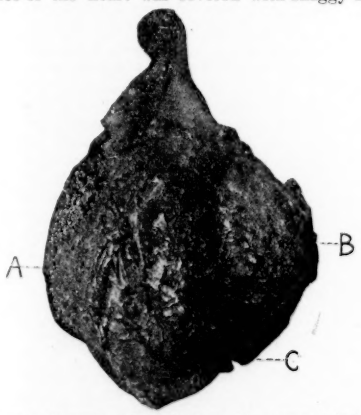
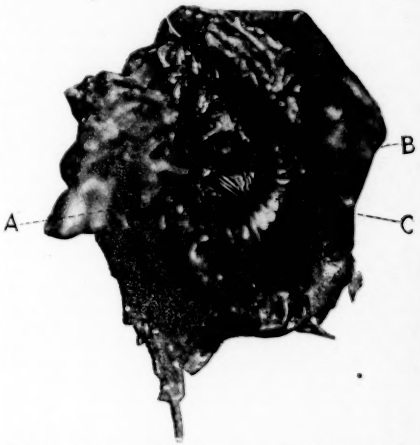
Recently Dr. W. H. Witt, Demonstrator of Anatomy, found in the body of a colored woman of about 25 years, the cardiac aneurysm shown in Fig. 1. The surface of the heart was covered with shaggy fibrin




of a recent pericarditis, but whether or not this was the cause of death we have been unable to learn, as the body was of the "resurrected" variety and we have not succeeded in tracing it so as to get a clinical history. The aneurysmal pouch when opened contained soft black clots, showing no attempt on the part of nature to fill it up with laminated clot. The pouch communicated with the cavity of the left ventricle by a large opening just below the attachment of the anterior segment of the mitral valve. This opening is two and three-fourths centimeters long by one and one-fourth broad (see Fig. 2). The opening easily admits the tips of the thumb and two fingers. The edges of the orifice are markedly hard, smooth, rounded and in places fibroid, the appearance being that of a lesion of long standing. The dimensions of the pouch are: length twelve centimeters, width eight and height seven centimeters. The left ventricle is both hypertrophied and dilated, its wall wall being one and one-fourth centimeters thick and its cavity notably large, the interventricular septum giving the appearance of having been pushed toward the right in such a way as to lessen the cavity of the right ventricle. On account of the marked postmortem change, nothing




definite could be ascertained in regard to the heart muscle microscopically, but so far as I could see it was normal. There was no evidence of atheroma in the aorta, and the other organs gave no signs of syphilis. The walls of the pouch consisted only of thickened epicardium, the muscular tissue having evidently been broken through. As for the cause, it was probably an embolus or thrombus in a radical of the coronary artery, which by its occlusion gave rise to a myomalacia, and the disintegrated heart muscle disappeared, allowing the blood to push against and gradually dilate the visceral pericardium.

## CREMATION.

BY GILBERT I. CULLEN, M.D.
CINCINNATI, OHIO.

Cremation, or the burning of the bodies of the dead, may be said to be an ancient custom with all countries excepting Egypt, where they were embalmed, Judea, where they were buried in sepulchres, and China, where they were buried in earth. In Greece only suicides, unteethed children and persons struck by lightning were denied the right of burial. At Rome one of the Twelve Tables said *hominem mortuum in urbe ne sepelito neve urito*, and in fact from the close of the republic until the end of the fourth century burning was the rule, although Macrobius says it was disused in the reign of Theodosius.

The Chinese were influenced by the doctrines of Feng-Shui, which taught that they must be buried in a grave on their own land, hence, the Chinese who die

in California are sometimes sent to their homes for burial. Even the Jews used cremation in the Vale of Tophet when a plague came, while those at Berlin and the Spanish and Portugese Jews at Mile End Cemetery have been among the first to welcome the revived process. Probably some nations had religious objections to pollutions of the sacred principle of fire and therefore practiced exposure, suspension, throwing into the sea, cave burial, desiccation or envelopment. The Colchians, says Sir Thomas Browne, made their graves in the air, *i. e.*, the trees. Cremation, while practiced over a great portion of both Asia and America, is not always uniform in procedure. Thus with some the ashes are stowed away in urns or buried in the earth, or strewn upon the ground, while with others curious customs are followed, as with the Digger Indians, who smear the ashes, mixed with gum, on the heads of the mourners. The Siamese have a rule by which the body, being embalmed, lies in a temple for a period which is determined by the rank of the dead person, the king for six months. In the event of the relatives not being able to have the body cremated, it can be buried and exhumed when the opportunity affords.

There can be no doubt that the practice of cremation has been prevented in a great measure by the Christian doctrine of the resurrection of the dead. Science has, however, shown that burning merely produces in a short time what putrefaction takes a much longer time to accomplish, but the feeling of opposition still lingers among many of the clergy. Some writers have been prominent in this reform movement, as for instance Mr. Hawers, who has expressed some very decided views in his work entitled "Ashes to Ashes."

The very general practice of burying the dead in the immediate neighborhood of a church, in order that they might have benefit from the prayers of persons attending, and the ceremony which precedes both the Asiatic and American form of cremation, have given the question a decided religious aspect in the minds of many. Cremation is really a much more sanitary procedure. The disgusting results of pit burial made cemeteries an absolute necessity, but cemeteries are equally liable to overcrowding, and are frequently nearer to inhabited houses or settlements than the older churchyards. It is possible to make a cemetery approximately safe by selecting a soil which is dry, close and porous, by careful drainage and by a rigid enforcement of the rules requiring a certain depth, eight or ten feet, and a certain surface space. But one has only to read Baker's laws relative to burial, to realize how many dangers burial legislation has to contend with. A certain amount of irrespirable gas will escape into the air or into the sewage drains, and thus reach houses, or will percolate through the soil to the extent of contaminating the water used for drinking purposes. An investigation has revealed that the residents in the immediate vicinity of the large Paris cemeteries are peculiarly prone to headache, diarrhea and ulcerative sore throat.

A dense clay soil is best for preventing levitation of the gases, but the worst for the process of decomposition. It must also be remembered that the cemetery system can only be temporary, the soil is gradually filled with bones and the encroachment on the cemetery property by newly erected houses, progresses day by day. The law itself permits the reopening of a grave after having been closed for fourteen years.

From the standpoint of sentiment it must be admitted that cremation would effectively prevent any interruption to "that sweet sleep and calm rest" which the old prayer "that the earth might lie lightly" has associated with the grave, while in addition we would escape the horror of putrefaction and of the "small cold worm that fretteth the unshrouded form."

For the past ten years many distinguished physicians and chemists have warmly advocated the adoption of cremation in Italy. In 1874 a congress was called at Milan to consider the matter, and a resolution was adopted petitioning the Chamber of Deputies to permit cremation to be practiced under the direction of the chief official having charge of that department.

In Switzerland, Dr. Vegman Ercolani is the champion of the cause, and there are two associations organized for its support. In 1797 this matter was extensively discussed by the French Assembly, while in Vienna the strong opposition has been overcome and cremation is now permitted, and in Berlin, Dresden and Leipsic there is a strong movement in favor of it, which is emphatically endorsed by Professor Reclam's last work upon the subject. In Great Britain the matter has slumbered for two centuries, since 1658, when Sir Thomas Browne published his book on "Hydriotophia or Urn-burial." In 1817, Dr. J. Jamieson gave a sketch of the origin of cremation, and for many years prior to 1874 Dr. Lord, medical officer for the health department, seems to have had the adoption of it. It was Sir Henry Thompson who first brought the subject prominently before the public, by organizing the Cremation Society of London. He also pointed out the danger of infection of air and water around cemeteries. The British authorities in India have already had much experience with cremation in that country, and Sir Cecil Beadon, together with the sanitary commission at Madras, have found it necessary, in the public interest, to erect cinerators, which might be used on the payment of a fee. At Poonah, in 1864, Colonel Martin constructed a pentagonal cinerator to obviate the excessively high cost of burial, which is generally above twelve rupees.

The Egyptians used a shroud of amianth, while the Greeks encased the bodies to be burned in asbestos.

The discussion which has recently been going on in Europe relative to the propagation of disease germs through the medium of the earth worms, will no doubt tend to greatly stimulate the interest in and support of cremation.

## SOCIETY PROCEEDINGS.

### Maryland Public Health Association.

*Meeting held at Baltimore, May 11 and 12, 1898.*

Dr. WILLIAM H. WELCH, president, in the chair and Dr. JOHN S. FULTON, secretary.

Dr. WELCH spoke of the age of the Association, started last year, and thought the only thing needed now is a large and influential membership to render this organization a power to demand and obtain anything that is for sanitary good of the State. We have already accomplished some practical results: we made some demands at our last meeting and the legislature has given us a vital statistics law, better than no law at all; and now we have a law which enables the State Board of Health to start a bacteriologic laboratory; this will enable us to investigate outbreaks of disease throughout the State. The diagnosis of tuberculosis, typhoid fever, etc., will be made for physicians throughout the State. This great work will stand in relation to public education and preventive medicine and it will stand on a sound scientific basis, with good laws and well

trained and good officers to administer these laws. Public opinion and effective legislation are necessary to secure the benefits of these laws, and we need in addition, the training of experts in public health as they exist in England. Training medical men does not necessarily carry with it the knowledge of sanitary science. This subject is being agitated and steps are being made to take those who would be trained in this department. The University of Pennsylvania has started a department looking to a degree for those who are expert in sanitary science. Organizations will accomplish these results and a National organization is important. We lack this; we have none here. We should have a department of public health, but there are reasons, partly political, why physicians have not been able to accomplish this. It is interesting to note how sanitation is effective, not only in solving many of our important medical problems, but in bringing about better health and greater contentment also. He spoke of the organization of a village inspection society, which was started by Mr. Northrop in New England, and said that such a thing might be done in this part of the country. In all this work, however, women are and must be a very important factor; they can be the important instrument in securing these results.

Dr. JOSEPH E. GICHNER and Dr. MELVIN S. ROSENTHAL of Baltimore then read papers entitled

THE SWEAT SHOP IN ITS RELATION TO PUBLIC HEALTH.

Dr. GICHNER said that we should look at the matter from all sides. The definition of sweat shop varies; some so-called sweat shops are really not sweat shops, and *vice versa*. Charles Kingsley, in "Alton Locke," has given us a very clear picture of sweat-shops in those days. A sweat shop is a place where a number of persons work under pressure and for a minimum wage, while comforts are not considered; it is generally contract work and it is usually in shops at home, and the dangers are from working at home. The condition of affairs in New York is very bad, but in Baltimore it is not so bad, on account of the small houses and the cheap rents. The Baroness Hirsch gave $1,000,000 to build cheap homes outside of New York, rent them at moderate prices and attract factories. In the city some of the worst sweat shop houses bring better rents than many larger houses, on account of the enormous number of persons which may be crowded into a small space. He then gave the limits of the sweat-shop system in Baltimore. This is the congested district, but strange to say there is not much diphtheria and scarlet fever, while the child mortality is not very high; there is very little insanity and the general moral tone is not so low as one would expect; consumption, however, is on the increase in these sweat-shops, but the disease is not carried away by the clothes, on account of the pressure during ironing with a hot heavy iron in a hot room. The iron prevents, in part, the spread of the disease to these people; he spoke also of Russian Jews having a great love for their children. The charities providing free milk and ice have had good effects in decreasing the amount of tuberculosis. Many cases occur after the people come to this country. Unaccustomed to working in a small room, on a sewing machine, and the hard work, stooping position and dust inhalation, all tend to cause the disease. While they are a menace to the community in a certain way, still the bad effects react principally on themselves. It is extremely hard to do anything for these people through the health department, because they are dependent on their work and resist every attempt at inspection.

Dr. ROSENTHAL said that those who work in factories were usually fairly well provided for, while those who work in their own shops, and for wages, were usually the worst off. They usually work from twelve to fifteen hours a day, and in winter the rooms are almost air tight, with men smoking cigarettes and probably spitting all over the floor. We ought to enforce the law and report the cases of tuberculosis, but this is almost impossible. In some places placards are posted outside of the door that contagious diseases are there. The public should be protected from the dangers of these diseases.

The next subject taken up was

THE NEED OF A HOSPITAL FOR INFECTIOUS DISEASES.

This was presented by the Health Protective Branch of the United Women of Maryland. A letter was first read from Dr. HENRY M. HURD of the Johns Hopkins Hospital, speaking of the urgent necessity of such a hospital.

Dr. JOHN S. FULTON, secretary of the State Board of Health, said that public feeling and private interest alike demanded defenses against whatever threatened the welfare of society. We provide against fire, crime, want and ordinary sickness, and yet we leave the hospital for such diseases as diphtheria, scarlet fever, etc., unbuilt. The health commissioner has some difficulty in knowing what to do with cases of this kind. Cases are usually reported by physicians, but any attempt to quarantine the family is fruitless and the disease may be, or is, actually carried in numberless ways, for if the city quarantines any family it must necessarily pay this family for any pecuniary loss. The trouble is we are too familiar with these diseases to be frightened by them. The cost of an infectious disease hospital would be necessarily great at first, but not as much as now dealing with individual cases. Such a hospital must be accessible, but almost every one objects to a hospital near them. Everything in this hospital should be free, and the city should bear all cost. Persons who would wish special accommodations and private rooms would necessarily have to pay for them.

Dr. WILLIAM ROYAL STOKES, city bacteriologist, spoke of an ideal infectious hospital. He said in such a hospital cases are brought into an observation ward and kept there until it is seen which disease will develop. The case is then sent to the proper hospital, after the diagnosis is made; the observation room is then disinfected and cleaned before any other patient is admitted. Each department for such diseases as measles, scarlet fever, etc., is kept entirely separate, the nurses being separate and every department being cut off from the others; after the patient is convalescing he is taken to another room with cases of the same kind, and is kept there until the period of infectiousness is over, that is, until the germ has disappeared. Smallpox is not treated at such hospital, but in a separate institution entirely.

Dr. C. HAMPSON JONES, health commissioner, then related some of the difficulties in carrying out his work.

Dr. WILLIAM J. TODD, health officer of Mt. Washington, said that infection was often carried by innocent persons and to innocent persons, and spoke of a very clear case by which some papers had been the means of carrying scarlet fever to a family.

Dr. WILLIAM H. WELCH, the president, said that the absence of an alarming tone in the papers of Drs. Gichner and Rosenthal were very gratifying; the fact that the clothing is sterilized before distribution, by the hot iron and the hot room is exceedingly interesting and had never occurred to him before. Nevertheless, danger from tuberculosis to those working in sweat shops is a real one and it is an important matter. It is gratifying to notice that there is a diminution in the death rates from tuberculosis; the death rate among the Hebrews is smaller than among others, and the contagion in the rooms might be accounted for by a theory of Flügge of Breslau. He says that the dangers from the dried sputum in spreading tuberculosis are not so great as the dangers from coughing; in the action of coughing, sneezing and hawking one sprays from the throat a fine moisture, which emitted from the mouth floats in the atmosphere for many hours. This Flügge thinks is more dangerous than dried sputum. Probably this may explain the great danger of contagion in small rooms like the sweat shops. In New York the board of health has power to close a room where a case of tuberculosis has died, that is to say, in tenement houses or small lodging houses, and these premises are disinfected, cleaned and kept vacant for a time at the expense of the owner. The need of a hospital for infectious diseases in Baltimore does not call for much discussion. He had brought this up in an address two years ago and it had passed the city council and become a law, and $30,000 had been appropriated, but no suitable location in the city could be found, as every one objected to the proximity of such a building. It must be accessible to be of use. He thought it was a bad plan to call it an infectious hospital or pest house, or such names, but municipal hospital would be a good name. There is no danger from contagion in such a hospital except perhaps from smallpox to the unvaccinated, and smallpox should never be treated in these hospitals. He thought that we should consider these subjects from a sanitary point of view only and not from an economic or business point.

Dr. WILLIAM B. CANFIELD thought the subject of sweat-shops should be considered from all sides to be practical. He had not noticed that in any papers read any reference had been made to the origin of the sweat-shop; there must have been some reason for calling it into being, and he thought it was partly because of late there had been a greater demand for cheaper clothing both for men and women, but especially for men, and this demand could only be satisfied by working the poor people in the shops. He thought that every man or woman who bought cheap clothing helped the sweat-shops.

Dr. SAVAGE, who is the physician to the Hebrew Benevolent Society of Baltimore, said that the sweat shop is an American institution and of recent origin; he had seen a large number of cases of tuberculosis resulting from sweat shop infection.

Dr. BROWN of New York, said that he thought many of these children of the sweat-shop workers escaped disease by prophylaxis; they are predisposed to the disease and contract it from

a general lowered vitality and a tuberculosis infection. But the fresh air societies in the city, and the free milk and ice, have all contributed to keep these children alive beyond the danger point. In New York the case is either removed from the house or else the house is placarded.

Dr. EDWARD M. SCHAEFFER said that all of these questions came back to the point of public enlightenment. Massachusetts says she has no sweat-shops, which is probably true.

Mrs. FENDLER said that such a model hospital as Dr. Stokes described existed in New York, the Willard Parker Hospital on Sixteenth Street; this is used as a reception hospital, only the cases which develop being taken to North Brother's Island. She said that the anti-expectoration law which had been passed in New York and Baltimore and other places had been very effective in Baltimore so far, but the street railways had prepared and were about to post cards calling attention to this law and forbidding spitting on the floor under penalty; and the United Women of Maryland were about to send out a number of watchers of detectives to have persons breaking this law punished.

Dr. HOWARD BRATTON, health officer of Elkton, related a case of infection the cause of which had been very difficult to trace.

Dr. GICHNER read several of the laws of Maryland in regard to sweat-shops, which showed that the laws were excellent if they were only enforced.

Dr. AUGUSTUS STABLER, health officer of Brighton, said that there must be concerted action to obtain any results; if the laws were good they ought to be enforced.

Dr. FLORA POLLOCK spoke of a case of scarlet fever in which the inspector called and it was a farce.

Dr. WILLIAM J. TODD of Mt. Washington, read a paper entitled "Vaccination and Revaccination," in which he said that vaccination and revaccination were not sufficiently regarded at the present time; too often certificates were given when there had been no proper vaccination. He thought that revaccination should be done at least once every twelve years, and oftener in many cases. This paper was discussed by Dr. Welch and Mr. Hartshorne.

Mr. CHARLES R. HARTSHORNE, school commissioner of Montgomery County, read a paper on

SCHOOL INSPECTION.

In his district, none of the buildings have a cubic air space commensurate with the seating capacity; the room that was supposed to be best ventilated was found to be very close and uncomfortable. In only one school were the children required to use individual drinking cups, but since that investigation other schools have adopted the plan. There has also been a greatly improved way of reporting the infectious diseases and the prevention of children from returning to school before a safe time after illness. In nearly every school the desks are antiquated and improperly arranged, in many cases the children being obliged to bend forward at a considerable angle in order to see the book.

Dr. AUGUSTUS STABLER, health officer of Brighton, said that in private houses heating is not so difficult, but in public buildings occupied for only a part of the day, especially in country districts, the floor is usually cold except in proximity to the red hot stove. Air soon becomes impure, windows are open, cold draughts come in and often cause illness. Nothing but ignorance can cause such conditions as these. In ventilating small school houses two things should be utilized: 1. Fresh air must be furnished through a flue placed under the stove, and this inlet should have a valve to regulate the influx of air, but should never be shut tight. 2. A ventilating chimney should be put on one side of the room, and if the stovepipe is inserted near this aperture the waste heat escaping will create a draught. If the building is already erected and the funds are limited, then the placing of a simple chimney made of plain boards, on the corner of the room and carried several feet above the roof and surmounted with a suction cap, answers the purpose. These have been found to work in rooms for thirty or more people. The opening near the floor should be the full size of the chimney, and the size of the chimney should be governed by the number of people who are to occupy the room. If there is not sufficient current, then a small lamp should be put inside of this chimney. Our children need not only free schools and free books but free ventilation.

Miss MCILVAIN read a paper for Miss RIDGELY, representing the Health Protective Branch of United Women of Maryland, describing the system of medical inspection which had been employed in Boston and other cities, which had caused diminution in the number of contagious diseases in the schools.

Dr. JOHN S. FULTON showed a device which he had for the ventilation of small rooms. It was a tin pipe within another pipe to be attached to the stove.

Mr. WORTHINGTON, school commissioner of Anne Arundel County, asked when the child was vaccinated if a certificate was given at that time?

Dr. FULTON said that a certificate only showed that the arm has been scarified and something rubbed on it.

Mr. WORTHINGTON said that if the child is not vaccinated it is the physician's fault.

Dr. TANEYHILL asked what reform would be suggested in this case?

Dr. WELCH asked if the certificate was given at the time of vaccination or when the arm was looked at?

Mr. WORTHINGTON said that it is usually not given until he is satisfied that vaccination has taken place.

Mrs. FENDLER said that in New York physicians go to every school and examine every arm, and send those who need it to be vaccinated. They visit the school again in a few days and see what the results are.

Mr. HARTSHORNE said that revaccination was very important and of use, but there should be some modification of the law. Some physicians give a certificate as soon as vaccination is done without seeing whether it takes; physicians should revaccinate every case that does not take. We must understand what "duly vaccinated" means. There ought to be a provision for revaccinating once in four to five to ten years. This carrying out of the law is placed on the shoulders of the teachers; this is a mistake, many of them being young women not paid much, and they have enough to do without this, and one would not think of fining one of these teachers unless in exceptional instances.

Dr. STABLER asked who should pay for the virus and the physician's work? He knew of no means provided in State or county for vaccinating children, and parents were not able to pay for it themselves; most of them do not want to do it if they can get out of it. It is too often a charity on the part of the physician; it is troublesome to do it properly; you first have to get your lymph and then catch your child. As it is done to prevent disease, the community should bear the expense, and there should be some stipulation in the law as to the kind of vesicle which is produced. As for Dr. Fulton's device, he does not like it, for if it is used, someone will think the building is ventilated and, though it may do the work, it is on a wrong principle.

Mr. HARTSHORNE said that an architect had just told him that Dr. Stabler was on the right track.

Dr. CHARLES W. MITCHELL of Baltimore, made some remarks on

PERIODS OF INCUBATION AND INFECTIOUSNESS.

He referred to the large number of cases attending the schools in the various cities, said inspection is possible with us in the large cities and towns, and gave definitions of the period of incubation, *e.g.*, the time between the entrance of the poison into the body and the appearance of the disease; this varies in different diseases and in the same diseases under different circumstances. The period of infectiousness is when the patient, by some of the discharges, retain the power of conveying the disease. He referred to the after effects and some of the discharges which may contain the disease, which may spread long after persons think it is passed. The infectiousness is just as dangerous in mild cases as in severe ones, and mild cases are the most dangerous kind because people do not recognize them. He protested against the idea which is prevalent of exposing children to the contagious diseases in order to let them get over it. In the outbreak of a disease mothers will bring other children in the same room and into the same bed so that they can have all the trouble of nursing them at once. This has too often caused the death of one or more of the children. He then went over systematically such diseases as measles, scarlet fever, diphtheria, whooping cough, chickenpox and mumps and showed the periods of incubation, the period of infectiousness and the general reaction of all these diseases.

Col. GEORGE E. WARING, at the evening session, delivered an address on

THE SANITARY TREATMENT OF WATER-BORNE WASTES IN TOWN AND COUNTRY.

He said that while we often pay attention to sanitary matters in the house, we neglect them outside. Sewage is unpleasant to the sight and to the smell, and still further it furnishes a growth of bacteria harmful to man. When foul liquid is thrown upon the ground it gradually loses its power of harm, but when discharge takes place in a cesspool dangerous putrefaction soon sets in. The cesspool is a source of danger in every place. The only proper disposal of sewage is to bring all of its organic contents into close contact with atmospheric air under conditions suitable for bacterial oxidation. There

can be no proper disposal that does not secure rapid resolution into elements. All decaying matter should be put in the way of being destroyed most quickly. If sewage be allowed to trickle over crushed stone, so arranged that air will penetrate all crevices, it will soon pass away as pure as water, leaving deposited a layer of sludge which is soon oxidized. Col. Waring then described a system of his own for disposing of sewage in country houses, which could be put up at small cost.

SECOND DAY.

Dr. EDWARD M. SCHAEFFER, representing the Physical Education Society of Baltimore, read a paper entitled "Wanted, a Man," a report of the physical training and hygiene in the schools. He referred to the necessity of physical training in schools as a means of making better students, and then he gave a detailed report of the different schools throughout Baltimore and Maryland.

Miss REBECCA STONEROAD, physical director of the public schools of Washington, D. C., read a paper on "Public Schools, Conditions, Problems and Methods." This paper was discussed by a numver of the members.

After this the addresses of the morning were illustrated by exercises in physical culture at the schools. Several classes from the children's department, and also from the high school, went through various figures of the Swedish system illustrating the addresses.

Rev. T. M. BEADENKOPF read a paper entitled

PUBLIC BATHS IN EUROPEAN AND AMERICAN CITIES.

He spoke of the difficulty that boys had in Baltimore in going swimming, as they are always driven away by the police. By the aid of several gentlemen he had erected several bath houses, the beginning of a system of public baths in this city. Europe is far ahead of us in the system of public baths. London is said to have expended two and a half million dollars in this deserving charity. They also have wash houses where soiled linen is laundered by the poor people, who pay a small sum for the privilege. This yields a large revenue to the city. He thought that the shower-bath was especially successful when introduced into the schools and he thought that the children who did not have baths at home would be very glad to use those at the schools. He hoped that the School Board of Baltimore would endeavor to establish free baths for the pupils. In New York there are a few floating baths on East River, which provide for bathing but not cleanliness. The taste for bathing is acquired, not natural. In the slum districts of Baltimore there is provision for about 9 out of every 100 persons for bathing in bath-tubs; in Philadelphia, 17 out of 100; in New York, $2\frac{1}{2}$ out of 100, and Chicago 4.

W. H. MORRISS, secretary of the Y. M. C. A., who is also a member of the City Free Bathing Commission, said that this work had begun about five years ago and even with limited facilities much had been accomplished; 30,000 men and boys used these baths last summer.

These two addresses were discussed by a number of members and several resolutions offered.

The following officers were elected for the ensuing year: President, George H. Rohé; vice presidents, Edward M. Schaeffer, Mrs. Daniel Miller, Miss Eliza Ridgely, Charles R. Hartshorne, Augustus Stabler, Howard Bratton; secretary, John S. Fulton; treasurer, L. Gibbons Smart.

## Medical Society of the State of Pennsylvania.

*The Fiftieth Anniversary, held in Lancaster, Pa., May 17, 18 and 19, 1898.*

The President, Dr. W. MURRAY WEIDMAN of Reading, called the session to order at 9:30 A.M., and Dr. E. V. GERHART, President of the Reformed Theological Seminary, invoked the Divine blessing upon the members and their doings.

Mr. C. A. HEINITSH of Lancaster, extended the congratulations of the State Pharmaceutical Society, and referred to the fact that the first president of this body was Dr. Samuel Humes of Lancaster. He congratulated the Society upon the completion of its half century, and alluded to the fact that the meeting at which the Society had been organized was held in the city of Lancaster.

The address of welcome in behalf of the Lancaster City and County Medical Society was delivered by Dr. GEO. W. BERNTHEISEL of Columbia. He said it was eminently appropriate that this the semicentennial meeting should be held in the place of the Society's birth. He mentioned that the County Society of Lancaster ante-dated this Society, having been founded in 1844, and heartily welcomed the delegates and all to the hospitalities of the city. The other officers are: First vice-president, Wm. B. Atkinson, Philadelphia; second vice-president, Wray Grayson, Washington; third vice-president, B. H. Detwiler, Williamsport; fourth vice-president, J. H. Bittinger, Hanover; secretary, C. L. Stevens, Athens; assistant secretary T. B. Appel, Lancaster; treasurer, G. B. Dunmire, Philadelphia.

Dr. A. R. CRAIG of Columbia, presented the program and other arrangements for the meeting. At this point a handsome gavel was presented to the presiding officer on behalf of the Committee on Legislation.

Dr. J. AUGUSTUS EHLER of Lancaster, one of the founders of the Society, was invited to a seat upon the platform. Dr. S. S Towler, Chairman of the Committee on Scientific Business, reported the work of that committee to make this session a complete one in point of papers and attendance of members.

Dr. C. L. STEVENS, secretary, reported that there were fifty-seven county societies in affiliation with the State society, having a total membership of 3194; permanent members 1317.

The treasurer, Dr. DUNMIRE, read his report: Receipts $3,717, expenses $3,699, in treasury $2,720. The Board of Trustees and the Committee on Publication reported requesting that all papers read before the Society first be printed in the official Journal, the *Pennsylvania Medical Journal*. This was agreed to.

The report of the Committee on Pharmacy commended the activity of pharmacists in improving their profession, and aiding so materially in assisting the medical profession. Regret was expressed that in a few instances druggists from mercenary motives have striven to lower the tone and the high standard established by their more conscientious and painstaking brethren.

An amendment was offered to the Constitution to change the time of the annual meeting from May to September. This was laid over until next year.

At the afternoon session Dr. H. S. MCCONNELL of Brighton, read the "Address in Medicine." He treated it under two heads, therapeutics and dietetics, alluded to the progress in recent years of medical instruction and text books, and suggested to the younger members of the profession not to overdose their patients, as small and frequent doses have been found of greater value than large doses at long intervals. He believed in therapeutic fasting, and opposed therapeutic stuffing. Keep alimentary canal in an antiseptic condition.

Dr. J. M. BATTEN of Pittsburg read a paper on "Alcohol." He said this had been used from time immemorial, and that there is no nation but what uses some form of stimulant or narcotic, and alcohol in some form or other is a universal favorite. He gave a very entertaining account of the origin of alcohol, its use in ancient times and the different drinks to which nations are addicted. In view of the fact that alcohol has been much abused, he said that for hundreds of years after its discovery chemists considered it an invaluable adjunct to their laboratories.

Dr. T. J. MAYS of Philadelphia, followed with a paper on "The Ice Treatment in Pneumonia." He applies the ice to the chest in wide mouthed rubber bags, or wanting these, it may be wrapped in towels either with or without a mixture of snow and sawdust. One application usually lasts two hours. Ice to the head is also valuable. Internally, strychnia, morphia and quinia are to be administered in appropriate doses. The paper was fully discussed, some being decidedly opposed to this treatment, fearing a heart complication or the extension of the inflammation. Dr. Mays closed by citing many authorities and cases where the treatment had been successfully employed. His own cases had been markedly successful. Cold reduces the frequency of the pulse, tones up the heart; 85 per cent. are cured without other treatment, in fact a large percentage recover with very little medical treatment.

Dr. J. J. JOHNSTON of Pittsburg, read the particulars of a case of "Tuberculous Cirrhosis of the Liver," giving the diagnosis of a case which had occurred in his practice and the autopsy.

Dr. H. BEATES, JR., of Philadelphia, read a paper on "The Variation in Strength and Consequent Unreliability of the More Common Official Preparations of the Materia Medica, as Proven by Special Clinical Observations." He spoke of the variations in the composition, properties, etc., of the many drugs derived from plants which, on account of their wide differences and complexity of textures found in the same variety, explain the unreliability and the different results following the administration of what are regarded as standard medicines.

Dr. ADOLPH KOENIG of Pittsburg, spoke on "Therapeutic Fasting in Typhoid Fever." Where common sense dictates no food is demanded by a patient, none should be given. The feeding treatment is so engrafted upon the public mind, the profession have so long been told to feed up that it is difficult to introduce any innovation; still, the value of fasting in this

disease is gradually becoming known to both the public and the profession, and we find it less difficult to make patients agree to this plan. Benefit is produced by some medicines which act to prevent the accumulation of gases in the abdominal canal, to favor the ease and comfort of the patient, check diarrhea or other complications. He plead for a fair trial of this plan of treatment.

Dr. S. SOLIS COHEN of Philadelphia, read a paper on "The Management of Typhoid Fever." He spoke of the necessity of each case being studied separately. Each was a law unto itself. It was only by this careful investigation of each individual case that we are able to determine whether food is demanded and how it is to be administered. Small quantities of food are easily assimilated and generally prove of value. It is important that at least one quart of boiled water should be given in each twenty four hours. As to the bath, red wine is preferable to whisky before and after it is taken. After the twelfth day the plunge bath should not be employed under any consideration. He detailed the various medicines needed in these cases.

Dr. A.A. ESHNER of Philadelphia, read a paper on "Orchitis Complicating Typhoid Fever."

Dr. MCCORMICK of Williamsport discussed hemorrhages in this form of fever. He was very positive as to the objection to opium in this disease and the necessity of maintaining an open condition of the bowels. Quite an animated discussion followed, participated in by many of the members.

Dr. MCCONNELL reiterated his views as to food in the disease and quoted a case of a lady who lived seventeen days without taking a particle of food and made a splendid recovery. He gave nothing but water to his patients at intervals of two hours, and only when hunger was complained of by the patient did he give food. The consensus of opinion was that more depended upon care, water, food only when absolutely needed, than upon any form of medication.

Dr. W. T. ENGLISH of Pittsburg read a paper on "Opiates in Treatment of Bronchitis." Among the valuable results obtained was the reduction of irritation, alteration as to the amount of secretion, removal of sleeplessness; and he claimed a speedy cure of the case to follow this plan. He preferred opium in the form of Dover's powder and preferably at bedtime.

Dr. H. A. HARE of Philadelphia, gave his "Treatment of Toxemia by Intravenous Injections and Hypodermoclysis; of Aneurysm by Electrolysis; of Hemorrhage by Calcium Chlorid." In each instance he gave the history of cases which he had successfully treated.

Papers on "Precocious Locomotor Ataxia and the Argyll-Robertson Symptoms," by Dr. F. S. PEARCE of Philadelphia, and "Notes and Observations in Purulent Pleurisy," by Dr. WESLEY S. STICK of Glenville, were read, followed by Dr. J. MADISON TAYLOR of Philadelphia, on "Three Cases of Lumbar Puncture in Infants, Affording Distinct Relief to the Symptoms of Leptomeningitis." He fully reviewed a number of cases of puncture of the spinal cord and the cases, three in number, where infants devoid of sight, hearing and speech, and suffering with meningeal symptoms, were restored. The operation is simple and devoid of danger under reasonable antiseptic precautions. He hoped the operation would soon come more thoroughly into use.

The "Address in Hygiene" was delivered by Dr. A. B. DUNDOR of Reading. He spoke of forestry restoration as of vast importance to the entire country, preventing floods, draughts etc., care as to prevention of fouling water by garbage purification, of drinking water, sewerage, attention to the mode of production of ice for domestic uses, the inspection of food products, the dangers of indiscriminate kissing, personal cleanliness, and similar topics relative to hygienic surroundings.

Dr. J. V. SHOEMAKER of Philadelphia, exhibited several cases of skin disease, detailed their clinical history, and showed a case of psoriasis superinduced by an attack of rheumatism, and another of fibroma molluscum where the body was covered with tumors, some of which the Doctor had succeeded in removing by electrolysis.

In the evening the semicentennial exercises were given in the Court House. Hon. W. U. HENSEL of Lancaster welcomed the society to the hearts and homes of the people of Lancaster and the County, and detailed at length the part that this county had taken in the organization of the State society. He alluded to the men of the past who belonged to Lancaster, the names of John L. Atlee, and others.

President W. M. WEIDMAN then delivered the Annual Address, which was a review of the past and the great part that the society had done in organizing the profession not only in the State but in the whole country; then he urged the need of the society taking a more active part in promoting legislation for the profession, the making of the several sessions of the county societies more valuable in every way, and also suggested that the bulk of the work done could equally well be done by special committees, saving the time of the society for more valuable matters.

A letter from Dr. ALFRED STILLE of Philadelphia, one of the founders of the State society, was read, deploring the fact that failure of health prevented his more active participation in the work of this society, of which he was once the Secretary, though he had always taken a deep interest in all its doings.

SECOND DAY.

The second day's session began at 9 A.M. The Committee on Nominations was announced and then the scientific business began. The death of Dr. CHARLES R. EARLEY of Ridgway, Elk County, was announced. Dr. Earley was long a prominent member of the society, but within the last few years had not been able to be present owing to the infirmities of age.

Dr. D. H. BERGEY of Philadelphia read a paper on "Natural Agencies Concerned in the Purification of Polluted Waters." He covered the subject of the tendency of nature to, by her vegetable and mineral agencies in the waters, purify the polluted water found in nearly every stream. All sources of pollution should be prevented as far as possible, thus not making the task of nature too great. His explanation of the work done by the benign bacteria in their destruction of the dangerous elements which enter so largely into polluted water was lucid and convincing.

Dr. H. S. ANDERS of Philadelphia discussed

THE INDIVIDUAL COMMUNION CUP AND ITS CRITICS.

The agitation for this reform has been conducted in a scientific manner. The fallacy of some of the criticisms is now to be dealt with, then show that the innovation is sound, sensible, sanitary and sacred in conception and practice. It is not a "fad" or its progress would not have been so quiet and steady, its appreciation so positive and permanent. Some say it is unnecessary. This comes from the class who decry vaccination, antisepsis and other sanitary improvements. The dangers of the common cup have not been exaggerated. He wished to emphasize the fundamental principle of absolute cleanliness as the true and efficient reason for individual cups, since that was impossible in the saliva tainted, tobacco-fouled, breath-blown, moustache dripped and sometimes disease-infected ordinary chalice. As to impracticability, the cups are practical and in constant use in over 300 churches in the United States. Inexpediency is a timid, politic excuse unworthy of any medical man professing to be instructed in matters pertaining to the public health. The conviction as to the principle involved is clear and strong. Why not have the courage of conviction in recommending and disseminating it? It is not always necessary to urge the adoption of individual cups, but the principle of cleanliness is never inexpedient to urge in relation to the communion, any more than to the home table. This movement is educational in method, not coercive. The criticism that the whole affair is unwarranted and sacrilegious interference is shown to be due to a misconception of the reason for the change: the form of administering communion wine only is changed, without trenching upon essential doctrine, creed or dogma, as was evidenced by the fact that all principal denominations, even in most orthodox churches, are using individual cups. That is believed to be no scriptural objection, since the wine, not the cup, is the essential element of ceremonial significance. Brief quotations from various denominational religious journals and the author's observation in being in close touch with the sanitary movement, controverted the criticism that the individual communion cup idea was subsiding and a failure. Marked progress has been shown to have taken place during the past year and many churches are now either about to adopt, or for financial reasons are only postponing to adopt, individual communion cups.

Drs. DILLER and MASSEY discussed the subject.

Dr. E. ROSENTHAL of Philadelphia read a paper entitled, "Remarks on Infant Feeding." He offered suggestions as to the preparation of cow's milk for use from the day of the infant's birth.

Dr. C. W. DULLES of Philadelphia detailed "The Simple and Satisfactory Method of Examining the Urine." In discussion, the majority appeared to regard the great need of the microscope in such examinations.

The "Address on Surgery" was read by Dr. W. L. ESTES of South Bethlehem, who mentioned some of the remarkable operations of recent years, especially the removal of the stomach by Dr. Schlatter, as a grand triumph, the patient being still alive. He expected the war would furnish much material for the skill of our surgeons.

Dr. C. K. LADD of Towanda followed on "Aseptic Surgery

in Country Houses," and gave at length the grand results obtained under such circumstances.

Dr. W. S. FORBES of Philadelphia read a paper on "Removal of Stone from the Bladder."

Dr. E. O. KANE of Kane read a paper on "Catgut" in its uses in connection with operations in surgery.

Dr. ERNEST LAPLACE of Philadelphia presented "The Pathology and Surgical Treatment of Chronic Varicose Ulcers of the Leg," and cited a number of cases which had been successfully treated at the hospitals in Philadelphia under his personal observation. He quoted these as a defense of his special manner of operating as had been detailed at a former meeting.

Dr. T. C. DETWILER of Lancaster in "Excision of the Thyroid Gland," reviewed the subject of goiter, and the method of treatment. He exhibited a case of a young man with a neck seventeen inches in circumference which could be increased to twenty-four inches.

Dr. B. ALEX. RANDALL of Philadelphia detailed "One Hundred more Mastoid Operations," in addition to a large number formerly detailed.

At the opening of the afternoon session, the Committee on Nominations reported: For president, W. B. Lowman, Johnstown; first vice president, R. B. Watson, Lock Haven; second vice president, G. W. Guthrie, Wilkesbarre; third vice president, J. Aug. Ehler, Lancaster; fourth vice president, Henry Landis, Reading; secretary, C. L. Stevens, Athens; assistant secretary, G. W. Wagoner, Johnstown; treasurer, G. B. Dunmire, Philadelphia, and a number of delegates to the AMERICAN MEDICAL ASSOCIATION and to other societies, and the usual Censors, Board of Trustees, etc. These were declared the officers for the ensuing year.

Dr. J. R. CARE of Worcester read a paper on "Unilateral Castration and Effect on the Prostate Gland." Here the gland was enlarged, and the operation followed by complete cure.

Dr. S. BIRDSALL of Susquehanna read a paper on "Delayed Ossific Union in Fractures of the Leg." He had had quite an experience in such cases, especially in children, and went into some detail as to the proper means of keeping the bones in apposition and promoting ossific union, etc.

Dr. L. H. ADLER, Jr., of Philadelphia followed on "Technique of Rectal Examinations and Diagnosis."

Dr. W. M. BEACH of Pittsburg read a paper on "Chronic Diarrhea as a Symptom of Rectal Disease," and exhibited, in illustration of his paper, a number of instruments which he employed in the treatment.

"Some Cases of Rectal Surgery" was treated of by Dr. A. R. CRAIG of Columbia, speaking more particularly of hemorrhoids as the most important occurrence demanding our attention here.

Dr. J. L. HAMMOND of Philadelphia spoke on "Radical Cure of Hernia, by the method of Nélaton and of Ombradin."

The Board of Trustees reported and recommended the appropriation of $2000 to the Rush Monument Fund to be held as a trust fund till the contract for the erection of the monument was accepted, then the sum of fifty cents was to be assessed upon each member of the various county societies in addition to the regular annual assessment, the year beginning January 1. Quite a discussion ensued on this and kindred topics, among others the way the journal was conducted, some appearing to oppose its continuance. It appeared as if a number of the members preferred the old method of issuing the proceedings annually in one volume, but after much discussion, the matter was decided in favor of the present method of publishing the papers and other transactions of the society.

Dr. G. B. MASSEY of Philadelphia read a paper on "Electro-Mercuric Treatment of Cancer," and detailed a number of cases so treated. He earnestly urged the efficiency of this method of treatment.

"The Pressing Demand for a Revision and Recast of Surgical Principles with the Birth of Some New Ones," was the subject of a paper by Dr. G. W. HIETT. He urged "horse sense" in place of the ancient theories as now developed by modern facts.

Dr. J. B. ROBERTS of Philadelphia presented a paper on "The Surgical Treatment of Common Deformities of the Face," advocating surgical operations for the correction of these deformities, and the repetition of operations till the best result has been obtained.

Dr. B. H. DETWILER of Williamsport delivered the Address in Mental Disorders. There are 10,000 insane cases in Pennsylvania, 800 not provided for. The annual increase is about 300. He regarded this as the result of the defective marriage laws. Like begets like, so when the defectives, the criminals, etc., are permitted to intermarry, the result is progeny of similar tendencies. This is not only for one but many generations. Law must stop this. We are entailing a curse on posterity.

Dr. J. CURWEN of Warren spoke on "Provision for the Insane in Hospitals especially Constructed for the Insane." He has long been connected with this matter and is perhaps one of the best experts as to the proper method of caring for these cases. He has been instrumental in having several hospitals for the insane built in Pennsylvania. He gave a very full history of the establishment of these hospitals in the State from the earliest inception to the present day.

"Hypnotism" was treated by Dr. G. E. BRILL of Harrisburg.

Dr. C. W. DULLES of Philadelphia again reported "On Hydrophobia." He stated that only six persons have died from this disease in Pennsylvania during the year past. Of 267 persons bitten, only 8 deaths have come to his notice.

Dr. T. C. DETWILER of Lancaster read a letter from the Pennsylvania University relating the manner of death of several rabbits inoculated with matter from cases supposed to be of persons afflicted with the disease. The subject was very fully discussed.

In the evening the members listened to the address of Dr. ROTHROCK on "Sanitary Relation of our Highlands to the State." He urged the vast importance of law to prevent the woodman's axe from destroying the wooded belt in the northern tier of counties. He believed forest land on high elevations is a positive cure for mild pulmonary tuberculosis. Another reason for preserving the woodlands is the protection of the water-supplies, regions becoming arid wastes solely by the destruction of the trees. The lecture was illustrated.

Franklin and Marshall College and the Seminary were thrown open to the visitors, who were hospitably entertained by the faculty and ladies, and every effort was made to show the appreciation of the visit of the Society to the City of Lancaster.

THIRD DAY.

On Thursday, the session was resumed, a number of valuable papers being read by members from all parts of the State. By the suggestion of Dr. L. J. Lautenbach of Philadelphia, a committee was appointed to investigate the text-books on physiology now used in the public schools, as some of these were misleading, even dangerous in their statements.

In the afternoon, papers were read by A. M. Fullerton of Philadelphia "Experiences in Gynecology"; by H. L. Williams of Philadelphia on "Primary Malignant Diseases of the Corpus Uteri and Value of the Microscope in an Early Diagnosis"; "Things which should be done or not done by the General Practitioner in Diseases of the Ear," by Ada Audenried of Philadelphia; "Nasal Catarrh and its Relation to Diseases of the Ear," by W. S. Brenholz of Lancaster, condemning the hot treatment so much in vogue and giving many arguments to prove the correctness of his views. He urged proper and thorough treatment of nasal diseases so as to prevent subsequent disease of the ear and objected to the nasal douche in the treatment.

Dr. L. J. LAUTENBACH of Philadelphia read a paper on "Rupture of the Drum of the Ear not Necessarily Incurable." He condemned the views so much held by the people, evidently due to improper teaching of the text-books.

Dr. TEODORE DILLER of Pittsburg read a paper on "Mental Hygiene of the Adolescent Period."

The Committee appointed on text-books on physiology, was Dr. Lautenbach of Philadelphia, Israel Cleaver of Reading, R. B. Watson of Lock Haven, O. F. Harvey of Wilkesbarre and John Fay of Altoona.

The installation of the President was then proceeded with, and after the usual thanks to the citizens, etc., the Society ended its semi-centennial session.

## Illinois State Medical Society.

*Abstract of the Proceedings of the Forty-eighth Annual Meeting, held at Galesburg, May 17, 18 and 19, 1898.*

*(Continued from page 1353.)*

In the evening of the first day the Society met at the Auditorium. Dr. J. M. G. CARTER, the President, delivered his annual address,

ADVANCES IN THE DOMAIN OF PREVENTIVE MEDICINE.

The chief object of the address was to show that a responsibility, almost an emergency, existed in the field of preventive medicine, and that this responsibility rested upon the State. He did not expect to be able to present more than an outline of what seemed to him to be a partial possible solution of the problem. He presented the following propositions as expressing his ideas of what is required:

1. The State or municipality should give men who can not secure other work some kind of employment which will afford them a living.

2. This may be done by introducing such public improvements as will add to the comfort of the people or otherwise benefit them or enhance the value of property.

3. A minimum rate of wages should be paid so that only those who can not find work elsewhere would seek such employment.

4. All able-bodied men without work who have no visible means of support and who do not apply for such government employment should be subject to draft for this labor.

5. The unfortunate and disabled poor should be cared for as wards of the State. Religion, humanity and civilization demand this.

6. The State should see that the poor are properly or comfortably domiciled in houses provided with good ventilation, supplied with good water and sufficiently warm. If possible, houses should be furnished with bathrooms.

7. Inspection of the homes of all the people should be conducted regularly and thoroughly, whether in public or private houses. The object of this inspection being to see that they are in good sanitary condition.

8. All foods put upon the market, meats, vegetables, fruits, dairy products, milk, manufactured products, etc., should be inspected as to their source, composition and present condition.

9. Public baths should be established where the poor can have facilities for bathing free or at a nominal cost.

10. These provisions should be enforced under conditions which will not interfere with the freedom of a liberty-loving people.

These propositions were elaborated.

Dr. J. W. PETTIT of Ottawa delivered the Address of Section 3,

STATE CONTROL IN MEDICINE.

He detailed the progress of legislation in favor of stricter requirements for the licensing of medical students. The old diploma law was instanced. Reference was made to the movement for the passage of a bill raising the requirements for the practice of medicine. The bill in question provides that candidates for medical licenses shall be qualified in all the general principles of all systems and schools of medicine and shall be subjected to examination by a State board before they shall secure their licenses. This agitation can lead but to one end, the wiping out of sectional lines among medical systems. The Doctor outlined further the specific provisions of the proposed law. He noted its vast benefit to to the public and the profession alike, and urged the physicians of the State to use their utmost efforts to influence members of the legislature to bring about the desired enactment.

In the absence of Dr. NICHOLAS SENN of Chicago, who was to have delivered the address on surgery, entitled "The Surgical Treatment of Intestinal Tuberculosis," the President introdued Dr. John H. FINLEY of Knox College, who spoke upon

INTELLECTUAL BACTERIOLOGY.

He referred humorously to the micrococcus egotisticus, a germ which impelled one to look out for himself and get everything he can. The wool gathering microbe often afflicted students and brought about in them a revulsion to thoughts of labor. Another microbe was the bacillus bombasticus, and still another, the micrococcus oratoricus, found frequently in Knox College. The spirillum Americanum abounded largely in the blood of Admiral Dewey.

SECTION 3, ETIOLOGY, STATE MEDICINE AND MEDICAL JURISPRUDENCE.

Chairman, Dr. DANIEL R. BROWER of Chicago; Secretary, Dr. C. B. JOHNSON of Champaign.

The Chairman, Dr. BROWER, in his preliminary remarks on opening the Section stated that the present status of medical expert testimony was a great discredit to the learned professions. The courts in many States have declared it to be of no value, whereas physicians know that testimony that is expert is of incalculable value in a court of justice.

Relative to State sanitation, legislation was needed. The medical profession deserves special credit for its self-sacrificing determination to prevent disease.

The first paper in this section was read by Dr. GEORGE N. KREIDER of Springfield. At the outset, Dr. Kreider stated that no law passed by the State legislature would succeed in driving out the quacks who were practicing in the State. He offered suggestions regarding the position of the Board of Expert Examiners, the fees to be charged, the penalties to be imposed for violations of the statute if passed. The physicians of Illinois required a good law on the statutes and should expend their utmost efforts to that end.

Dr. HAROLD N. MOYER of Chicago followed with remarks on "What Should Be the Law in This State?" He stated that a new restrictive law was particularly needed because a great number of quacks were practicing in the State under the protection of the present State license. The speaker sanctioned the clause in the proposed bill providing that each licensed physician register his name with the State every year.

Dr. L. R. RYAN of Galesburg spoke of the advantages of separating the State Board of Health from the Licensing Board. He defined the duties of the State Board of Health, which had now become so arduous, he said, that it could not attend to the additional duties of a licensing board.

Dr. BASCOM of Ottawa followed with remarks in which he spoke of drafting laws for Illinois upon the lines of those of other States. He promised the proposed bill, with its minor changes, the full support of the Illinois Homeopathic Medical Society.

Dr. J. O. DECOURCY of St. Libory gave a summary of the laws governing expert testimony in other States and countries.

DEFECTS OF LAWS GOVERNING EXPERT TESTIMONY IN ILLINOIS.

This paper was read by Dr. SANGER BROWN of Chicago. He drew attention to a feature which had in many instances excited more or less adverse comment from every one who had observed it. He referred to the spectacle afforded by the experts on one side appearing to directly contradict those on the opposite side. It is claimed that this happens because there is no efficient law to prevent any licensed physician whatever from posing as an expert where a medical question is involved. Further, that each side hiring its own experts, physicians so employed naturally take more or less of a partisan attitude upon the witness stand, if indeed some do not lie very palpably. It is desirable that a course requiring instruction from an expert should avail itself of the services of the individual best qualified to render them, and also that he should sustain no relation to either litigant which might tend to render him in the least partial. Dr. Brown said that under the present lay an expert is usually allowed a fair opportunity to express his views on the case on trial, and if honest and competent, he need have no fear of cross examination; but if dishonest and incompetent, he is likely to fare badly and cast discredit upon the profession.

Dr. FRANK P. NORBURY of Jacksonville, also spoke on the subject of

DEFECTS OF LAWS GOVERNING EXPERT TESTIMONY IN ILLINOIS.

Expert testimony, he said, has been tossed ruthlessly on the wave of public opinion in recent years. Not that its value has been undervalued upon the whole, but rather that its practice has been considered too much of a barter and sell procedure. It has unfortunately fallen under the ban of commercialism, and the expert no longer represents to the public an untrammeled, unprejudiced witness, but stands in the light of having been committed to the tender rights and interests of the side for whom he is sworn, and by whom he is retained. He is supposed to represent the facts of his side in a way that will favorably sustain the opinions advanced by the counsel of the client and to construe these facts under oath. While this is the picture presented by the lay press to the people, and by them discussed, yet the courts, counsel and the profession find after all that expert testimony really has value and is essential to the administration of justice. The essential elements of value Dr. Norbury believes are based upon three factors, as expressed by Becker. 1. What is the own value of the expert, meaning his ability and honesty? 2. What are the established facts in the case upon which he bases his opinion? 3. What have been his opportunities for examination of these facts? Upon such a basis the courts recognize the true value of expert testimony, and in the general questions of science and skill, are disposed to give just weight and consideration to an expert opinion when expressed.

Dr. D. W. GRAHAM of Chicago, read a paper entitled

SUGGESTIONS FOR OUTLINES OF A LAW REGULATING EXPERT TESTIMONY.

He said that in the minds of those desiring legislation on the subject of expert testimony, there are two distinct things to be accomplished. One pertains to compensation of the expert witness, and the other looks toward some method of securing impartial testimony of such character as will command the confidence of all concerned. In outlining or framing a Bill that will in any degree accomplish this purpose and meet the approval of the majority of those most interested, there are several points to be considered. 1. The scope.—Should such a law be applicable to all kinds of expert testimony or only to medical? Should it be applicable in both civil and criminal trials?

Should it apply throughout the State or only in the larger counties, as, for instance, those having not less than a given number of inhabitants? So far as it is a constitutional question, he is assured by high legal authority that a law framed in accordance with either the affirmative or the negative of these propositions could not be construed as class or special legislation, such as is prohibited by the State Constitution. So far as the speaker's own judgment and information go, he believes it would be expedient to limit the application of such a Bill to medical testimony and make it apply both to civil and criminal cases throughout the State rather than to the larger counties. 2. The second point relates to qualifications. It seems desirable that the Bill should specify certain qualifications for the expert witness, such as a minimum of experience, special study, residence, etc., and if it were to be applicable only in the large cities it would be expedient also. The question of qualifications could be left almost wholly to the judge and counsel to determine by preliminary examination. 3. How and when appointed? The presiding judge in any case on trial involving medical testimony should be authorized in his discretion, or on the application of counsel for either party to appoint or subpœna one or more physicians as medical experts who shall be designated as court witnesses. The question arises whether the judge shall or may so appoint when either party to the suit applies to have court witnesses appointed. 4. The fourth point concerns what may be called the status of a court witness and his relation to other witnesses. He should be subject to the same rules as other expert witnesses and be examined and cross examined in the same manner, and the Bill should provide that the rights and privileges hitherto enjoyed by litigants should not be abridged in any degree by reason of the appointment of court witnesses. 5. Remuneration.—The fees provided for witnesses by the Bill should be moderate, and must be so, if it ever receives any consideration at the hands of lawmakers. Probably they should be fixed by the hour rather than by the day—say, not less than five dollars, nor more than ten dollars, for each hour actually in attendance.

Dr. Graham spoke of the recent decision of the Supreme Court in the Dixon case, saying that it made it the law that the expert witness is exactly on the same footing as other witnesses as regards fees and compulsory service in both civil and criminal cases.

Dr. Denslow Lewis of Chicago, related his personal experience with the Dixon decision. He referred to its salient points, as well as to the arguments of counsel and the factors which apparently influenced the Appellate and Supreme Courts in arriving at the decision.

Dr. J. A. Egan of Springfield, contributed a paper entitled "Legislation Necessary to Promote Better Sanitation Throughout the State." The aid to progress in preventive medicine by better sanitation was alluded to and plans offered for such a division of labor by health officers that improved sanitation shall be secured.

The Society voted its unanimous approval of the Medical Bill to be presented to the State Legislature.

SECTION 2.—SURGERY, SURGICAL SPECIALITIES AND OBSTETRICS.

*Chairman*, Dr. J. L. Wiggins of East St. Louis; Secretary, Dr. A. E. Halstead of Chicago.

UREMIA IN THE PROCESS OF CHILD-BEARING.

A paper on this subject was read by Dr. Henry F. Lewis of Chicago.

Uremia was defined as a condition of the system resulting from the retention in the blood of toxic products which should normally be eliminated, chiefly in the urine. Eclampsia is a frequent sequel of uremic phenomena occurring in the course of the child bearing process. In the consideration of the subject the author included the eclampsias, neuroses, psychoses, and other symptoms due to the toxemia accompanying or following pregnancy. The subject also included the albuminuria of pregnancy, which is found in a considerable proportion of all cases; the cases exhibiting the more serious symptoms of uremia without eclampsia; the cases where the toxemia causes convulsions, as well as the cases, few in number, where eclampsia comes on without albuminuria or other sign of urinary disturbance. Albuminuria occurs in about 5 per cent. of pregnant women. In most cases there is no important kidney lesion, and the albumin is due to a disturbed blood pressure or to hyper albuminosis of the blood. Primipara are three times as liable to eclampsia as multipara.

Dr. Henry T. Byford of Chicago, read a paper entitled

AN IMPROVEMENT IN THE TECHNIQUE OF THE AFTER-TREATMENT OF PERITONEAL SECTION.

The day before a peritoneal section the patient is dieted and purged sufficiently to reduce the gaseous distention of the intestinal coils, to the end that they may be kept out of the way during the operation. In vaginal sections, and in abdominal sections for large tumors, the intestines are not so liable to be in the way as in abdominal sections upon small pelvic growths or diseased organs. In the latter class of cases the speaker tries to produce six or eight large stools the day before the operation is performed. Patients of relaxed fiber receive full doses of strychnin from the time he sees them. Two hours before the time set for the operation a mild but efficient cathartic is given, such as two teaspoonsfuls of the fluid extract of cascara. As soon as the patient awakes from the anesthetic, a dram of sulphate of magnesia in an ounce of water, or an equivalent dose of some mineral water, or an ounce and a half of the liquid citrate of magnesia is given every hour and repeated immediately whenever vomited. About six hours after the operation is completed a stimulating enema is given, consisting usually of two ounces of glycerin and four of water, or from half to a dram of inspissated ox gall in half a pint of water (without glycerin), is thrown into the upper rectum, and repeated every two or three hours until flatus passes freely between enemas. When this occurs the saline is also stopped, but not until then. In trying to start the passage of gas most surgeons think it enough if gas and feces come with the enema. But this is not sufficient. The treatment must be continued until flatus passes freely between enemas, and if it ceases to pass occasionally after the enemas have been discontinued, then another should be given. If the operation has been a simple one, Dr. Byford commences the salines and enemas a little later, not to prevent bad results, but because the patient is usually very uncomfortable until flatus passes freely and is nearly always perfectly comfortable afterward. It enables him to do without morphin. On the other hand, if raw intestinal surfaces are left after a difficult operation, he sometimes gives a high glycerin enema before the patient is taken off the operating table. As presumptive proof of the value of this treatment, he has recently had 105 consecutive recoveries after peritoneal sections, and he commenced to be thus thorough and prompt in its administration about the time this series commenced.

Dr. Franklin H. Martin of Chicago, read a paper on

OPERATIVE TREATMENT OF CARCINOMA UTERI,

in which he summerized thus: 1. A microscopic examination of the tissue of the three portions of the uterus should be made whenever one of the well known classic symptoms of carcinoma appears. 2. Carcinoma of the vaginal portion of the cervix should be treated by vaginal hysterectomy, including the upper portion of the vagina and as much of the base of the broad ligament as it is possible to include, with the ureters pushed well to the side of the pelvis. 3. Carcinoma of the body of the cervix should be treated by vagino abdominal hysterectomy, with thorough removal of the broad ligament and the deep iliac glands. 4. Carcinoma of the body of the uterus should be treated by thorough removal of the uterus by vagina or abdomen so as to include the tubes and ovaries. The iliac glands should be removed if involved. 5. Neglected carcinoma should never be abandoned, but should be symptomatically relieved by curettement and cauterization, if the more radical procedure no longer seems practicable, with the possible hope of permanent relief in a small percentage of cases.

Dr. Robert H. Babcock of Chicago, spoke on the diagnosis of acute pulmonary abscess and gangrene, with especial reference to their surgical treatment.

Dr. Henry P. Newman of Chicago, read a paper on

CONSERVATION OF TISSUE AND FUNCTION IN PELVIC SURGERY.

The object of the paper was to stimulate investigation along the line of greater conservatism of the general health of women. This may be aided: 1. By a deeper study into the problems of cell nutrition and general metabolism, in order to determine the relative value of glandular and other structures, and the relation of the pelvic organs to the great systemic laws. 2. By seeking the habits and regimen of individual patients as to diet, dress, social and educational life, etc., for the causes of disease, remembering that these, if allowed to go uncorrected, may handicap the best efforts of medical science, and effectually undo all that may be accomplished. 3. By giving to every definitely diseased structure the best opportunity to recover its function that science can devise, by prophylactic supervision of life and habits. By palliative treatment when it offers relief, and by prompt resort to surgical interference when it is called for in the interests of true conservatism.

Dr. L. L. McArthur of Chicago, read a paper on "Sacro-iliac Disease (Tubercular)," in which he reported six cases. The speaker's aim in selecting this subject for discussion was to present what practical points he had gleaned from personal experience with five advanced cases and a sixth possibly incip-

ient case (all tubercular), as well as to call attention to a disease which must be thought of in making a diagnosis in every suspected hip-joint disease, sciatic or low lying Pott's, and which once seen will probably remain indelibly fixed in memory.

Dr. WELLER VAN HOOK of Chicago, described a new device for facilitating operations about the anus. Starting from the proposition that existing technical methods fail to provide means of aseptic or even approximately aseptic operating, especially in view of Cohn's demonstration of the penetrability of fresh cautery-eschars by pathogenic micro organisms, he reasoned that we should seek means of operating upon hemorrhoids and other anal lesions by dissection and suture.

The device consists of a half inch rubber drainage tube, perforated near one end, and drawn through a minute opening in a piece of medium weight dentist's rubber dam tissue twelve inches square. It is essential to success that the bowels be prepared beforehand. The method recommended is: 1, laxatives to thoroughly evacuate the bowels, on one occasion only, four or five days before the operation; 2, daily colonic flushings thereafter; 3, after the laxatives have acted, one or two drachms of bismuth subnitrate daily in divided doses to keep the colon empty. In operating, e.g., upon hemorrhoids, the following technique is employed: The sphincters are stretched, the rectum irrigated and the tube with its covering introduced by means of an eight inch forceps. To keep the umbrella like device from slipping out and to keep the dam in contact with the rectal wall, some strips of gauze are pushed up into it, between the tube and the dam. The dam is then pushed aside, the tissues washed again with antiseptics and the hemorrhoids excised and the wound sutured. A piece of iodoform gauze saturated with compound tincture of benzoin is then inserted between the dam and the anal wall. The apparatus and dressing are left undisturbed for four or five days.

### THE TREATMENT OF ACUTE ABSCESS AND GANGRENE OF THE LUNG.

Dr. E. A. HALSTEAD of Chicago, read a paper on this subject, in which he said that it was only within the last few years that well known surgical principles had been applied to intrathoracic suppurative conditions. The term abscess of the lung was employed in the paper to designate only acute suppurative inflammation, non gangrenous, which had its seat within the lung tissue, therefore cavities filled with pus formed either by a dilated bronchial tube or by destruction of lung tissue from tubercular infection were not considered. The most frequent cause of acute abscess of the lung was lobar pneumonia. Foreign bodies in the bronchi and penetrating wounds of the chest were occasionally the origin of pulmonary abscess. A pulmonary abscess varies in size from that of a millet seed to one containing a quart or more of pus. As to the prognosis, fully 75 per cent. of the cases of gangrene of the lung terminated fatally if left to themselves. Patients with these conditions should be treated by prompt operative measures. The surgical treatment of the lung abscess comprehended puncture of the abscess, aspiration, incision of the lung and drainage. Puncture should only be employed for diagnostic purposes. Dr. Halstead then dwelt at length upon the technique of the operation of pneumotomy for abscess or gangrene, which he said varies according to the exigencies of the individual case.

Dr. A. C. CORE of Carlinville, contributed a paper entitled "Points in Minor Surgery." He first discussed shock and allied conditions, and then passed on to the consideration of stitch infection, burns, ingrowing toe-nails, and infantile phimosis. These subjects were taken up consecutively, and their treatment outlined.

Dr. J. O. DECOURCY of St. Libory followed with a contribution entitled "Straits of Early Life." He said that nothing could be more important to the obstetrician than thorough preparations to meet emergencies and difficulties constantly arising in the lying-in room. The speaker would have his clientage know something of the potency of preventive medicine, in the line of physical development, dietetics, climatology, sanitary or hygienic law; something of right from wrong mating and marriage, and the laws governing progeny in the transmission of traits which affect the mind and body of the offspring, either for good or for evil. In connection with the paper the author exhibited plates from Moreau and other authors, arranged by Getchell in his "Science and Practice of Obstetrics."

### AN INTERESTING CASE OF PYONEPHROSIS,

was the title of a paper by Dr. A. I. BOUFFLEUR of Chicago. The points of special interest in the case were: 1. The history would naturally lead one to believe that the disease had existed for practically three years without any interruption, but with a gradual increase in the number and severity of the symptoms. 2. Its chronicity and symptomatology with reported favorable effect of the salicylates would indicate the presence of lithemia with the probability of lithiasis. 3. The history indicates the occurrence of a pyogenic infection of a mild type at least one year before, as evidenced by the occurrence of sweats with malaise and a gradually increasing sense of weakness. 4. The development of pronounced evidences of sepsis probably marked the beginning of incomplete evacuation of the pyelonephritic abscess. 5. The persistent temperature and severe spasmodic cough were undoubtedly caused by the perinephritis with subsequent suppuration and a diminution of the cough, but with an increase in the evidences of general sepsis. 6. In the absence of any suppurative inflammation in the urinary tract Dr. Bouffleur concludes that the infection of the kidney came through the circulatory channel. While the source of such an infection is not infrequently indeterminable, he believes it can be safely concluded that the primary cause was the pneumonia or possibly a mixed streptococcus infection which complicated the measles. Such infections are prone to be of a mild character and metastatic manifestations may not appear for months after the primary affection.

Dr. JACOB FRANK of Chicago read an interesting paper entitled

### PATHOLOGIC HISTOLOGY OF INTESTINAL UNION AFTER THE USE OF THE FRANK BONE COUPLER.

From the microscopic study of the healing of intestinal wounds after some of the various suture methods and mechanical devices, Dr. Frank arrives at the following conclusions: 1. That no suture method insures an exact coaptation of the various layers. The Czerny-Lembert suture, considered one of the best of the many suture methods, does not insure a perfect line of apposition. Frey, Wölfert's assistant, is of the same opinion. In a specimen three weeks after operation, after the Czerny-Lembert suture had been used, there was a marked turning in of the ends of the bowel. The mucosa in this specimen is not yet regenerated (here the speaker showed a chart). 2. In regard to the invagination suture method, he referred to but one very briefly, namely, that of Harris, which will stand as a type for the others. Union takes place, but the different layers are not in juxtaposition and the lumen of the bowel is greatly encroached upon. This is not only visible microscopically but macroscopically. The microscopic specimen was obtained sixty days after operation from a dog operated on by Dr. Harris himself. 3. That all suture methods leave the subsequent lumen of the bowel more stenosed than either the Murphy button or the author's coupler.

Referring to the different layers after the use of either the Murphy button or the Frank coupler, the speaker notes the following: That the mucosa regenerates completely and that it shows an entropion which is due to the contraction of the underlying scar. Boari, in his experiments with the modified Murphy button, claims that there is no regeneration of the mucosa. Murphy, in his experimental work, finds a complete regeneration of the mucosa. The muscularis mucosæ is lost in the scar tissue. The submucosa blends with the cicatrix and presents no change from the normal.

*Muscularis.*—Neither the inner circular nor the outer longitudinal fibers show any regenerative process. Dr. Hektoen, in his report on Dr. Murphy's button operation sections, states that after thirty days the longitudinal muscular coat can be said to be almost restored and the transverse muscular completely united by connective tissue. In describing the section, which was removed after sixty days, Dr. Hektoen says that the longitudinal and circular muscular layers are continuous and not distinguishable from those in the normal intestine, except that they contain some small spaces (blood vessels) and occasional traces of fibrous tissue. Dr. Frank differs with Dr. Hektoen in that he has not found this condition in any of his specimens, nor in that made with the Murphy button on a dog killed sixty days after operation. The most conspicuous part of the scar is the non-regeneration of the muscular coats, and it is the feature which at once attracts one's notice upon looking at the section through the microscope. Dr. Hektoen further says that "were it not for the thickening described in the submucosa and muscularis mucosæ it would be difficult, if not impossible, to recognize the line of union. The submucosa beyond question is thickened, but not so much so as to make it a prominent feature. This layer is regenerated, and as for the muscularis mucosæ, it, like the muscular coats, has not regenerated." Dr. Frank does not question that some muscular fibers may grow out into the scar and meet, but they are not sufficient in number to call the process a regeneration. This is not found in any of his (Murphy's) specimens and suture

methods made by himself. The cutting of the muscular coat acts as a stimulus and the result is a proliferation in the cut ends, but the connective tissue grows far too rapidly to permit a regeneration.

*Serosa.*—This layer is invariably united perfectly and is closely applied to the muscularis. Owing to the irritation and reaction resulting therefrom it is considerably thickened and more vascular but otherwise presents no change.

*The scar.*—The fibers of the cicatricial tissue run from the serosa to the muscular coat. The direction of the fibers has an important bearing upon the subsequent narrowing of the lumen of the bowel. The fact that the fibers run from the serosa to the muscularis, tends to increase the lumen of the bowel when contraction takes place by lessening the thickness of the intestinal walls themselves. If the fibers took a circular direction a pathologic stenosis would ensue upon contraction.

Dr. H. C. FAIRBROTHER of East St. Louis spoke on the repair of bones.

Dr. JOSEPH B. BACON of Chicago read

A PLEA FOR EARLY OPERATION FOR LACERATIONS OF THE CERVIX UTERI.

He said that lacerations of the cervix uteri have been recognized and their resulting pathologic consequences scientifically noted only since about 1862. Emmet was the first gynecologist to recognize the fact that these lacerations were the cause of erosions, eversions, etc., that had previous to his discovery been treated and described as ulcerations of the neck of the womb. All were agreed that the Emmet as well as the Schroeder operation, in selected cases, was all that could be desired; but, unfortunately, there was quite a percentage of cases that neither the Emmet nor the Schroeder operation could cure. Dr. Bacon described a new adaptation of pathologic facts as recognized in the disease affecting non-striped muscles and fibrous tissues in other organs, and showed how like conditions may help to cause some of the serious results found in neglected cases of severe lacerations of the cervix. He claims that the destructive changes found in both fibrous and muscular tissue of the cervix, and later in the body of the uterus, are due to the persistent chronic inflammation and that these changes could be avoided or arrested by an early operation. But if neglected, there is no limit to the destruction and in time no operative procedure will more than relieve a part of the symptoms and can not remove the diseased tissue and cure the woman. He claims that the same pathologic laws that explain cicatricial strictures of the rectum, as advocated by Harrison Cripps, apply equally well to the cicatricial changes that are found in the cervix uteri because there is a like anatomic make-up of the muscles, glands and excessive fibrous tissue normally present in both: 1. The tendency of fibrous tissue, subjected to chronic inflammation, to become both hypertrophied and contracted. 2. The tendency of muscular fiber, when subjected to undue and persistent nerve irritation, to undergo fibroid degeneration with permanent atrophic contraction of its fibrous elements.

Dr. EMIL RIES of Chicago gave an interesting talk on plastic operations on the tubes, illustrating his remarks by diagrammatic sketches.

Dr. ELIZA H. ROOT of Chicago read an instructive and interesting paper on hydramnios and its effect on gestation.

Dr. EDWARD H. OCHSNER of Chicago read a paper on

THE TREATMENT OF SEPTIC INFECTIONS FOLLOWING PIN-PRICKS, ABRASIONS AND SIMILAR INJURIES,

in which a clinical distinction was made between four kinds of infections following these injuries. Under class 1 he considered a form of infection which betrays itself by a marked local disturbance with the formation of pus at the point of infection, the systematic disturbance being relatively slight. Under class 2, he spoke of that form in which there is marked local disturbance with the formation of pus at the point of infection and with an ascending cellulitis, the systemic disturbance being usually more marked than in class 1. Class 3 is that variety in which there is only disturbance locally, but in which there is an early and severe involvement of the regional lymph glands and severe general disturbance. Under class 4 he considered that form in which there is no demonstrable local disturbance and only relatively little disturbance in the regional lymph glands, but in which there is severe general intoxication due to the presence of pathogenic bacteria or their ptomains in the blood. The treatment for these infections were dwelt upon at considerable length.

Dr. J. E. BEST of Arlington Heights contributed a paper on

THE RELATION OF MIDDLE EAR DISEASE TO FACIAL SPASM.

He had seen a few cases with the following history: After severe exertion and exposure the patient complains of pain in the ear. This is followed in a few days by a discharge of pus, more or less profuse, from the aural cavity. Simultaneous with this or a few days later, facial spasm may occur. The author then dwelt upon the pathology. The etiology was purely of germ origin.

*Treatment.*—First treat the ear aseptically with peroxid of hydrogen, keeping it perfectly aseptic until all external trouble has healed. Allay pain during acute stage with morphia or other anodyne, used hypodermically if need be. Later, facial spasm may be relieved by ten grains of phenacetin, two, three or four times a day as required. This has given more relief than any other drug he has tried. If the case is of long standing or very obstinate, much benefit may be derived from the application of the electro-cautery applied to the nasal mucous membrane as nearly as possible over the site of the above-named ganglion. Repeat once in five or six days after thoroughly cocainizing the mucous membrane.

The election of officers resulted as follows: President, T. J. Pitner, Jacksonville; first vice-president, H. N. Moyer, Chicago; second vice-president, J. T. McAnally, Carbondale; permanent secretary, Edmund W. Weiss, Ottawa; assistant secretary, W. F. Grinstead, Cairo; treasurer, George N. Kreider, Springfield. Place of meeting, Cairo, the third Tuesday in May, 1898.

## Chicago Academy of Medicine.

*Regular Meeting, March 18, 1898.*

*(Continued from page 1357.)*

TUBERCULOSIS OF THE OCULAR STRUCTURES.

Dr. CASEY A. WOOD—So far as the eye is concerned, tubercular diseases affect it with comparative rarity if we except the lids. The ocular apparatus may be regarded as an organ practically shut off from tuberculous infection. Even the conjunctiva is probably a less frequent seat of tuberculosis than any other mucous membrane in the body. I need not say much about the palpebral skin which becomes tuberculous (lupus, lupoid, etc.) about as often as any other part of the dermal covering of the face. Tuberculosis of the conjunctiva is often unrecognized owing to its close resemblance, in the early stages, to trachoma. I have seen a few cases that were undoubtedly tubercular, but I think the diagnosis is easy. The proof of its presence lies in a bacteriologic and histologic examination of the suspected tissues. The later ravages of the disease are unmistakable, or at least give rise to the suspicion that the process in question is not purely trachomatous. The treatment is practically that of tuberculosis of the skin, thorough destruction of the diseased parts. I believe that a general tuberculosis may be set up as a result of systemic infection through the lymph channels communicating with the pre-auricular glands.

Infection of the cornea is usually secondary to conjunctival tuberculosis, and when it occurs may for a time resemble an ordinary pannus or an interstitial keratitis.

Tubercle of the intra-ocular structure is still rarer. The chief sites are the iris and choroid, and when they occur they are usually late manifestations of a general tuberculosis. The nodules of a tubercular iris usually appear upon an otherwise healthy membrane, that is apart from acute inflammation, so that one's suspicion of the true nature of the small growths should at once be aroused by the fact. Some of these cases recur with more or less damaged vision, if the patient lives long enough, but in the majority of instances the eye is destroyed.

I have seen very few cases of true miliary tubercle of the choroid, the commonest form of the disease, but this manifestation of a tuberculosis does not differ in any material effect from similar deposits elsewhere in the body. As in the lung, the giant cells may be pigmented and the minute nodules are not always discoverable by the ophthalmoscope. Probably the ophthalmologist would know more about the tuberculous choroidea if the disease developed itself in the early rather than in the late stage of a general infection; the patient becomes moribund before vision is much affected.

TUBERCULAR MENINGITIS.

Dr. DANIEL R. BROWER—The diagnosis of meningitis as a general proposition is easy, but the differentiation of the various forms of meningitis from each other is attended with the extremest difficulty. I am of the opinion that the ordinary differential points of tubercular meningitis at the bedside are of no value. Unless we can find the source of tuberculous infection in the individual, in viscera or in glands, unless the patient has previously suffered from tuberculous manifestations, or unless we can find tubercles in the choroid, or better

than all, the Skeer sign of tuberculosis, we have no proper basis on which to make a differentiation at the bedside. The Skeer sign, first described by the late Dr. John D. Skeer of this city, is situated on the inner pupillary margin of the iris, about one-sixteenth of an inch from the margin, as a distinct wreath of white clouds, doubtless due to tubercular deposits, and as the disease progresses and the contracted pupils become dilated, instead of the white cloud-like masses we have yellowish-brown circle, undoubtedly due to degeneration of the blood vessels in consequence of the presence of miliary tubercular deposits. And as the third stage progresses and the pupils become more dilated this yellow-brownish circle becomes very much attenuated.

The procedure proposed by Quincke of Kiel to puncture the subarachnoidean space with a hypodermic needle, between the fourth and fifth lumbar vertebræ, and the microscopic and bacteriologic examination of the withdrawn fluid will determine the presence of the specific organisms that have produced the infection, and if it is tubercular meningitis, the tubercle bacilli should be found there. Indeed, the subject of the diagnosis and classification of meningitis should be rewritten, and in every instance we should determine by this simple procedure what the organism is, whether it be the diplococcus of pneumonia, the streptococcus or the staphylococcus, or whatever specific micro-organism may be the cause of the infection, and then with the nature of the infection known we will be in a better position to prescribe treatment and to make the prognosis. The prognosis in tubercular meningitis is absolutely bad and I think those cases of recovery reported are cases in which an error in diagnosis is made. They were not tubercle bacilli, but some one of the numerous other infections that may be produced. Sometimes they are so much alike that it is, as a rule, impossible to differentiate them at the bedside.

MENTAL PHASES OF TUBERCULOSIS.

Dr. HARRIET C. B. ALEXANDER—The psychology of phthisis has long been analyzed by alienists who not only recognize spes phthisica as a common phenomenon and as an expression of exhaustion removing the checks on emotional mobility, but recognize likewise another symptom which underlies much of the difficulty in treating seemingly sane victims of pulmonary tuberculosis. This mental symptom which is exceedingly marked, so much so that it always arouses a suspicion of tuberculosis, as a complication of psychoses, at least, is suspicious. The general mental state of the phthisical is essentially that of the primary confusional lunatic plus emotional mobility. As Spitzka has remarked, there is usually altering depression, emotional mobility, intensification of the egotism common to invalids and a suspicional mental state. As I pointed out nearly a decade ago, this suspicional mental state underlies the refusal of, and changes in, medicinal treatment, if the patient be at home, and the refusal of food if the patient be in a hospital for the insane. The most prominent and decided symptom which appears in the insane, in the larval stage of the disease, is this suspicion. In them, for this reason, physical examination is often difficult, and cough, hectic fever, etc., are often absent.

Frequently it happens that a far advanced phthisis seemingly likely to lead to sudden death comes unexpectedly to a standstill, cough, hectic fever, etc., cease, but demonstrable decrease of the mental symptoms is followed by reappearance of the pulmonary. This alteration was long ago pointed out by Dr. Schroeder van der Kolk. It had been observed by Dr. James Macdonald in the case of Guiteau's uncle, who died in the Bloomingdale Insane Hospital.

According to Clouston, it is possible to predict tuberculosis from the mental symptoms. If these cases have been acute at first, the acute stage is of very short duration and passes rapidly into an irritable, excitable, sullen and suspicious state. There is a want of a fixity of purpose in the mental condition. The intellect at first is not so much obscured as there is great disinclination to exert it. There are occasional unaccountable little attacks of excitement, lasting only for a short time, unprovoked paroxysms of irritability and passion in a subdued form. There is a disinclination to enter into any kind of amusement or continuous work. If this be overcome there is no interest manifest in employment. If there be any one single tendency characteristic of these cases it is to be suspicion. In many cases this insanity commences insidiously and shows itself by an alteration of conduct and affections, an increased irritability and waywardness. There are fitful flashes of intellectual brightness.

The inter-influence of insanity and insane hospital hygiene combined are illustrated in the results of Dr. E. C. Bondurant of the Bryce Insane Hospital, Tuskaloosa, Ala. He found from the results of autopsy among the negroes, who are peculiarly prone to tuberculosis of a rapidly fatal type, that while more than one-half of the patients in the insane hospital suffer from tuberculosis, one-third of those who contract the disease make a good stand against it, either entirely recovering or living for a term of years without being injuriously affected by small though unhealed foci of tuberculosis or dying from some other cause in the course of a very mild and chronic form of the disease.

My own results in the Cook County Insane Hospital, and those of Kiernan in the Ward's Insane Hospital, tend to corroborate and emphasize these results of Dr. Bondurant. His observations were made chiefly among negroes, in whom, since the war, phthisis runs a rapidly fatal course, since it usually attacks organisms broken down by lues. The prognosis of phthisis therefore in the white insane would be much more favorable than even that indicated by Dr. Bondurant. The influence of phthisis on many forms of insanity is to introduce a suspicional element not hitherto present. The suspicional emotional mobility renders it difficult to allow these persons any great liberty on parole as they are liable to take offense without any possible occasion. In some cases the emotional depression produced by phthisis in the ordinary types of insanity may proceed as far as melancholia in the true sense of the term. In one case coming under my observation, the patient seemed to be a true case of melancholia with the facies, capillary circulation and emotional depression well marked. The patient had phthisis and had been deserted by her husband. She ran down rapidly and seemed almost moribund from dyspnea, but rallied under the effects of quebracho given in half dram doses every two hours. She seemed to rally also from her depression. The fancies and depression of melancholia disappeared, but a new type of insanity made its appearance. It was found on careful investigation that the patient had had systematized delusions of grandeur for several years before being suspected of any mental disorder and that therefore the melancholia was a complication of a pre-existing paranoia which had not been suspected.

TUBERCULOSIS MAMMÆ.

Dr. ALEXANDER H. FERGUSON—Tuberculosis of the mammary glands is, comparatively speaking, rarely met with. The paucity of its literature no doubt led Cornil and Ranvier ("Treatise on Histology") to state that "examples of tubercles in the breast are unknown." Cornil has since contributed to this subject. The older surgeons described cold abscesses and fistula of the mammæ with such accuracy as to leave no doubt in the mind of the clinician that they were tubercular in character. Sir Astley Cooper spoke of a "scrofulous tumor of the breast," and Velpeau described tubercles in the skin over the breast, and three manifestations of tubercle in the breast. The next writer appears to have been Nélaton, in 1839 ("Thèse d'Agrégation," 1839). Under the head of diagnosis, Berard paid attention to it ("Diagnostic des Tumeurs cancereuses et tuberculeuses du Sein," Thèse de Paris). After this about forty years elapsed without anything appearing in literature except a short article by Koltz, in 1879 (*Archiv für Klinische Chirurgie*, Bd. xxv). In 1881 Dubar's monograph appeared on "Tuberculoses of the Mammæ"; as did also one by Le Dentu (*Rev. de Chirurgie*, 1881, 1-27). This is all I have been able to find in the archives of medicine before Koch discovered the bacillus of tuberculosis in 1882. The next year, however, an instructive article made its appearance by Ohnacker (*Archiv für Klin. Chir.*, 1883, Bd. 28, p. 366). Billroth treats of it in his work on "Diseases of the Breast." Other writers could be mentioned, such as Durel, Dubare, Marchand, Mandry, Bender, Poirier, Hutchison and others, as having given some attention to this affection of the breasts soon afterward. The literature has been steadily but slowly increasing. Our most recent works on surgery give it a place among the diseases of the breast demanding surgical interference.

*1894.*—Sabrazes and Binaud (*Archiv. de Médecine exp. et d'Anatomie path.*, Paris, November, 1894), noted that the patients are predisposed to tuberculosis by hereditary antecedents. They claim that traumatism awakens the inactive bacilli of tuberculosis, which are then carried by leucocytes into the injured interstitial tissue of the gland, where a caseous abscess forms. Their observations and conclusions are supported by Fiorentine and Parieti (January, 1894, *Journal d'Hygiène*, Paris).

Powers (*Annals of Surgery*, Vol. xx, No. 2, 1894), in an able article revises the literature. He found thirty-five cases recorded, only one of which was a male; twenty-two out of the thirty-four females were married; twenty-one of the married had borne children; six of the twenty-one had suffered with inflammation of the breasts; and three had a non-suppurative inflammation. He reports a case operated upon by Bull nine years previously.

*1895.*—Warren ("Surgical Pathology," p. 583) calls attention to the thirty-four cases recently corrected by Roux, two being males. Both breasts were affected in two cases; ages were from 16 to 52; injury happened in three cases, and in twenty four cases it was secondary. Warren also quotes Mandry's collection of forty cases; one a male; aged 17 to 62; majority developed after confinement, but in eight cases no children were born; it was in the right breast in seventeen cases and in the left in eight cases; lymphatic glands enlarged in seventeen cases and appeared to have been secondary. No glands were noticed in seven cases. In one of Warren's cases infection took place through the ducts.

Berrink (*Beiträge zur Klin. Chir.*, Tübingen, 1895) thinks that extension to the breast from surrounding tubercular tissue infected from without is a common source of the disease, and where this is excluded the hematologic mode of infection must take place.

Gaudier and Peraire (*Revue de Chir.*, September, 1895, Paris) made a study of three personal cases. They state that the tumor may be small, movable, and as a rule, painless; the nipple generally retracted, and enlargement of the axillary glands often precedes the tumor in the breast. They insist on the epithelial intra-acinous origin of the growth, but they never found the Koch bacillus in the ducts of the breasts.

Catellani (*Il policlinico*, Rome, January, 1895) reports two cases. In one case there were three separate tumors, varying in size from that of a walnut to a pigeon's egg. The axillary glands were enlarged. There was no history of tuberculosis and her general health was good. The tumors and glands were removed and the bacilli of tuberculosis found in them; but inoculation experiments were negative. A year after the operation both cases showed no local relapse or sign of tubercle elsewhere.

Piskacak and W. Roux (*Klin. Chir.*, Vol. viii) described two forms, the confluent and the disseminated. They claim it is mostly secondary, being caused either by metastasis or by extension of tubercular process in adjacent parts. They advise, in the disseminated form, early amputation of the breast and removal of axillary glands in all cases.

E. Bender described two cases where he thought the infection was primarily due to cracked nipple.

Howitz (*Hosp. Tidende*, 1895) describes a typical case of tuberculosis of mamma. A young girl, aged 18 years, presented herself, complaining of several lumps in the right breast, about the size of a walnut, also of an ulcer in the lower border of the breast, which did not seem to yield to treatment. Family history.—Mother and two sisters died of tuberculosis; brother had enlarged glands of the neck. Personal history.—first noticed small lump on breast, very little pain. This lump later opened itself and the ulcer was the result. On examination of the breast it was found to be a mass of indurated nodules. The nipple was very much retracted; axillary glands very much enlarged. A diagnosis of tuberculosis of mamma was made. Operation.—The breast was totally extirpated and contents of the axilla removed; patient made an uneventful and rapid recovery. Microscopic examination confirmed diagnosis.

*1897.*—Charles Greene Cumston ("Intern. Clinics," Vol. iv, 6th series, 1897) reports a case in the surgical service of Dr. E. Kummer in Geneva, Switzerland, in which the gland was extirpated for tuberculosis and cured, and observed four years after extirpation. In this case the axillary glands became enlarged and tender first, and three weeks afterward a swelling appeared in the left breast, which soon formed an abscess that was opened by her physician. A second abscess formed above the nipple, which was also incised. A third abscess similar to the others made its appearance. Chronic fistula followed. The nipple was retracted, the whole gland smaller than normal, the scar brownish in color and depressed. The breast was lumpy and indurated.

Tuberculosis runs the same course in the breast as it does in the other soft structures of the body. The changes in the tissues do not deviate from the tubercular granuloma and gross lesions of the usual type. The same nodules, the similar infiltration, the cheesy degeneration and its liquefaction, the formation of sinuses which become chronic, the same tendency to lymphatic extension and general tubercular infection, and the low form of chronic inflammation, identify tuberculosis of the mammæ with tuberculosis elsewhere. The age, the puerperal state and lactation of the patient predispose to tuberculosis of this gland, as does also a family and personal tubercular history.

The breast may be larger or smaller than normal and look natural or be perforated with fistulæ. The skin may or may not be discolored over diseased areas. The nipple may or may not be retracted. Foci in the breast may be single or multiple, but usually the disease becomes disseminated throughout the organ. The axillary glands may be primarily or secondarily enlarged and fistulous or may not be diseased at all. Pain is not an early symptom and tenderness develops with it in the late stages. The tumor develops slowly and is usually accidentally discovered by the patient. When fistulæ form they have little tendency to heal. There appears to be a marked tendency to tuberculosis of the lungs when the breast is tubercular. The infection of the breast may be primary or secondary, usually primary. The prognosis of the breast is almost always bad, but for the individual good, if early extirpation is resorted to.

The origin of the disease may be through the lymphatics, the blood vessels or local abrasions or sores on the breast, such as cracked nipples. I have had occasion to extirpate the mammary gland twice for tubercular fistulæ and abscesses. One, an Icelandic woman, about 32 years of age, of scrofulous appearance, had nodules appear in the breast in the upper and outer quadrant several weeks after having had sore nipples during lactation. These formed fistulous tracts through the skin and opened spontaneously, and the glands in the axillæ were enlarged, all of which proved to be tubercular. A second case demanding extirpation was also fistulous from chronic abscesses which developed during lactation, in a woman 25 years of age, with a marked tubercular family history. Some of the abscesses had been lanced and two or three had opened spontaneously. The fistulæ led to almost any part of the breast and communicated with another. The nipple was retracted. The glands in the axillæ were not considered enlarged and were not explored. The number of cold abscesses of the breast and single chronic fistulæ that I have treated I do not recollect. I recall two cases of secondary infection of the mammary gland in the male, both of which extended from tuberculosis of a rib, and both of which were extirpated while dealing with the diseased rib.

*Diagnosis.*—The clinical history of the case in many instances may be all-sufficient to establish the nature of the disease, especially in its later stages. The surgeon should use his microscope almost as often as he does the knife and examine the contents of all abscesses and sinuses as a routine practice. The early discovery of the bacilli of tuberculosis in an apparently innocent abscess of the breast will materially influence the line of treatment and save the patient much suffering and possibly general infection. Nearly all cases of chronic mastitis, chronic mammary abscess, mammary fistula and the chronic mastitis of lactation, most of them, are no doubt tubercular in character. Ordinary pyogenic infections have usually a sudden onset, acute inflammation follows and in the exudate pus cells and pyogenic cocci will usually be found. Syphilitic gummata in the breast may be easily mistaken for tuberculosis. The specific history and test treatment are of importance here. Carcinoma should always be kept in mind in this connection, and one must not be misled by a hard nodule, a retracted nipple and lymphatic nodes, for these are found in tuberculosis of this organ.

*Mammary actinomycosis.*—Mammary actinomycosis very closely resembles tuberculosis in some instances. Müller (*Münchener Med. Woch.*, Munich, Dec. 18, 1895) has presented a study of the ray fungus in the mammary gland. The cases of secondary infection are not of interest to us, but two cases were apparently of primary origin. First case; aged 35 years; lactation, one breast used, the other received a blow and a nodule appeared. This was incised and pus let out. The wound healed in two months. The breast hardened again and a sinus formed. She looked well. The glands in the axilla were not enlarged. The sinus in the tumor led to a cavity which contained characteristic granules. The fungus was found in sections from the breast that was removed with the tumor. The second case, a woman aged 25 years, received a blow on the breast. It pained her for some time, and several months later a tumor formed. It was lanced and soon healed, but six weeks later another tumor formed, occupying the outer half of the left breast. A sinus formed in it. A cough was present, but there were no signs of lung disease. Linseed meal poultice was applied at one time in both cases. The diagnosis lay between chronic mastitis with abscess and tuberculosis. The diseased tissue was removed and some months later sections were made of it and the ray fungus discovered. From a diagnostic standpoint, it may be important to remember that in these two cases of probable primary actinomycosis there was in both: 1. A blow on the breast. 2. An incision. 3. The application of linseed meal poultices.

*Treatment.*—The treatment is local. For tuberculosis of this organ, as elsewhere, it resists all therapeutic measures. Tuberculosis of the breast endangers the life of the patient, and the researches of Kolossnikow have established the danger

of infecting an infant suckling a tubercular breast. The great tendency to implication of the whole organ, in addition to the above considerations, clearly demands the removal of the diseased tissues, usually of the whole breast and axillary glands. Vigorous treatment of cracked and excoriated nipples infected with tuberculosis may prevent the spread of the infection in the early stages. Local foci opened, curetted and iodoform dressing assiduously carried out suffice in some cases.

*(To be continued.)*

## PRACTICAL NOTES.

**Arterial Compression as an Anesthetic.**—M. Jabony of France claims to have produced anesthesia for a few moments by compression of the carotid arteries. The absence of total loss of consciousness he claims to be sufficient for reducing a dislocation, making an incision or setting a fracture. The success, however, may be due to suggestion.

**Return to an Old Method.**—Dr. Laache in *Deu. Med. Woch.* (1898, No. 9), gives three cases of uremia in which venesection was employed with the happiest results. The quantity of blood withdrawn was from twelve to twenty ounces. In the days of Dr. Benjamin Rush, venesection unsuspiciously gained many triumphs in this class of cases, inasmuch as the first resort was had to it in all comatose and convulsive conditions. The received notion even in those days was that the method was eliminative.

**A New Clinical Symptom of Scarlet Fever.**—Meyers (*La Presse Médicale; Philadelphia Times and Register*) reports a series of cases at the Hôpital du Port d'Aubervilliers during 1897, in which he observed a slight paralysis of the upper extremities with frequently only numbness in the hands. At times instead of a numbness only a pricking sensation located in the palmar surfaces of the finger ends or in the palm of the hand was noted. This was rare in the feet, but if present was found at the same time in the hands. The duration of the sensation is variable and rarely before the scarlatinal eruption. The author states that he has never met this symptom in other eruptive diseases, in diphtheria, in erythema from drugs and notably in mercurial manifestations on the surfaces of the skin.

**Foot Blisters** heal rapidly without pain or inflammation if they are incised the whole length with a bistoury and emptied, then each lip raised with a sound and the cavity sprinkled with iodoform powder. The blister is then covered with a thin layer of cotton and a small piece of adhesive plaster applied outside. No inconvenience is felt in walking, even at once; the wound dries in a few hours and new epidermis soon forms. —*Semaine Méd.*, May 4.

**Manifold Advantages of Oil in a Collyrium.**—Prepared with water the effect is uncertain, the application inconvenient, as it causes considerable afflux of tears and spasm of the lids, and the sterilization is difficult. These difficulties are entirely obviated by using olive or peanut oil freed from fatty acids by washing with alcohol and then heated to 120 degrees C. for ten minutes. The basic alkaloids dissolve more readily in the oil than the salts; mix cold and keep in a cool place. Apply with a glass stirrer slightly flattened and curved at one end, which takes up the oil and deposits it much more effectively than the dropper or brush, while easy to sterilize and gentle in its touch.—B. Scrin, *Semaine Méd.*, May 4.

**A Case of Suppurative Appendicitis.**—Dr. Thomas H. Emory (*Medical Record*, May 21, 1898), before the Medical and Chirurgical Faculty of Maryland, reported the case. The patient was a colored man, 24 years old. The surroundings were most unhygienic. Recovery followed with only a small fecal fistula. The features were: 1. Absence of chills at any time. 2. A moderate range of temperature and the character of the pulse. 3. The seeming subsidence of the symptoms two or three days before the operation. 4. The apparent readiness of the abscess to break, the walls being extremely pliable. 5. The absence of any tumor or fluctuation.

**Ichthyol in Affections of the Eye.**—M. Eberson recommends ichthyol in the highest terms, especially for children, in treating trachoma, as it shortens materially the course of the disease and ensures complete recovery. It also heals rapidly all cases of catarrh of the conjunctiva with or without corneal complications. It is also a powerful agent in clearing up cicatricial formations in the cornea. He uses a 50 per cent. aqueous solution, to which a little glycerin is added, applied and left a minute or two. The *Klin.-therap. Woch.* of May 1, contains his report of numerous observations during the last two years.

**Further in Regard to Orthoform.**—The parts become insensible to pain in five minutes after the application of orthoform, in a powder of 10 to 20 per cent. salve. This effect lasts for thirty hours on an average, sometimes for three to four days. It always checks the secretion more or less, which is especially valuable in flap transplantations. In one case 60 grams a week were applied without secondary results, proving its non-toxicity. The base is preferable, as the salt causes slight transient smarting. Orthoform only acts locally and has no effect upon sound tissues, hence is valuable in diagnosing ulceration in the stomach.—*Münch. med. Woch.*, 1897, 44, 46.

**Significance of a Green Color in Intestinal Strangulation.**—Begoin, in discussing the different colors of strangulated bowel and their significance, says that he has been able to artificially produce shades of yellow, yellowish green, and olive in loops of human intestine by means of human bile obtained at autopsies, as well as by the bile of dogs; but that he has never been able to reproduce the Florentine bronze which he has seen in some fatal cases of obstruction. The practical outcome of his investigations he thus sums up: *a.* A clear green tint may exist without alteration of the intestinal wall. *b.* Yellow green, dark green, bottle green, and black green have a more sinister significance. They do not necessarily indicate the death of the tissues of the bowel, but the latter may occur with these colorations. At any rate it is desirable to use other methods to determine this point, such as irrigation with hot water or pricking of the intestine. *c.* The same precaution should be employed in the presence of that beautiful green color known as Florentine bronze. In the two cases under the observation of the author in which this color existed, there was gangrene of the gut; but the evidence is too limited to say that such is of necessity the case.—*Gazette Hebd. de Méd. et Chir.*, January 27.

**Soluble Metallic Silver in the Treatment of Infections.**—B. Credé of Dresden announces that he has been very successful in the treatment of pure and mixed staphylo- and streptococcus infections with his argentum colloidale, which dissolves almost perfectly in water and albuminous fluids, applied as a salve rubbed in, or taken internally in pills or solutions. It is also used for uterine pencils and rectal injections. In order to have the tests uniform he has only given his formula yet to one firm, Heyden of Radebeul, near Dresden, although later he intends to publish it generally. The extreme solubility of silver in this form is surprising, and also the fact that the addition of a little albumin protects it against the action of the acids of the stomach which would otherwise transform it into an insoluble salt. No secondary effects have been observed from its use in any form, even with months of treatment. Credé's recommendation of itrol and actol (arg. citr. and lact.) as a prompt harmless disinfectant for septic and aseptic wounds, clean, ready and marvelously effective, has been confirmed by many physicians in various countries, he states, adding that he has received most favorable letters from thirty-eight (*vide* JOURNAL, xxvii, page 1160). He expects that the soluble silver treatment will be found even more effective in internal medication.—*Klin. Therap. Woch.*, 1898, Nos. 14, 15.

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SATURDAY, JUNE 11, 1898.

## TYPHOIDAL CHOLECYSTITIS AND CHOLELITHIASIS.

The subject of the formation of gall stones and their relation to the presence of microbes in the bile has attracted considerable attention of late, and has been made the subject of quite a number of experimental and other investigations.

It would seem that in typhoid fever, in which an infection of the bile with typhoid bacilli occurs so very frequently, the conditions necessary for the formation of gall stones upon, so to speak, a bacterial basis would be unusually favorable.

Suppurative inflammation of the gall bladder has long been recognized as one of the complications of typhoid bacilli. The first report of cholecystitis caused by invasion of the bacillus typhosus was made by GILBERT and GIRODE[1] in 1890, and since then a series of many observations concerning the relation of typhoid fever to infections of the gall bladder has been made. In 1891 BLACHSTEIN[2] noted the almost constant occurrence of the bacilli in the gall bladder in cases of experimental inoculation of typhoid bacilli in rabbits, and Professor WELCH[2] has called attention to the presence of the micro-organisms in this situation in these animals a considerable length of time after the inoculation; thus, in one case the bacilli were found in the bile on the one hundred and twenty-eighth day after the inoculation and after having disappeared from every other organ of the body. Since then a routine bacteriologic examination of the bile in the fatal cases of typhoid fever in the Johns Hopkins Hospital has shown that in about 50 per cent. of the cases a pure culture of typhoid bacilli can be obtained.[3] These organisms are usually present without any apparent symptoms; a variety of changes may be caused by their invasion however, ranging from catarrhal inflammation to the formation of stone, to ulceration and perforation and its consequences. Thus various writers emphasize acute suppurative cholecystitis as a not unusual complication of a late stage of typhoid fever.

CUSHING[3] calls attention to the fact that there is a distinct group of cases in which acute cholecystitis appears, not during the fever, but some months subsequently, and in all of these there have been found gall stones. BERNHEIM[4] emphasizes the frequency of attacks of gall stones in typhoid fever, and DUFOURT[4] was able to trace a history of typhoid fever, preceding the attacks of gall stone colic by a few months, in nineteen cases. A review of the cases of cholecystitis occurring in HALSTED'S clinic in the Johns Hopkins Hospital shows that ten out of thirty-one cases of gall stones gave a previous history of typhoid, the interval varying from a few months to several years.

In 1890 WELCH demonstrated micro-organisms in the center of gall stones, and suggested that they might be the starting point in the precipitation of biliary salts. NICHOLS is quoted by CUSHING as having observed the early appearance of the bacillus of typhoid fever in the gall bladder after intravenous inoculation, and a distinct clumping of the organisms was observed in those animals which were later examined postmortem. Such observations show that a reaction similar to the agglutination of the organism by serum may take place in the course of their sojourn in the bile, and indicate that the clumps may form the starting point for the deposition of calcium bilirubin salts and thus become the origin of a stone, symptoms of which may occur after convalescence. The development of post-typhoidal cholecystitis may therefore, according to CUSHING, be summarized as follows:

1. The bacilli, during the course of typhoid fever, quite constantly enter the gall bladder.

2. The organisms remain vital in this fluid for quite a long time.

3. In the course of time the bacilli become clumped, an intravesical agglutinative reaction takes place.

4. These clumps may be presumed to form nuclei for the deposit of biliary salts, in accordance with the fact that micro-organisms are quite regularly demonstrated in the centers of recently formed stones.

5. Gall stones associated with long-lived infective agents may provoke inflammatory changes in the bladder at any subsequent period.

CUSHING was able to collect four cases of post-typhoidal cholecystitis with cholelithiasis in which the bacillus typhosus was cultivated from the bile at

[1] Soc. de Biologie, 1890.
[2] Johns Hopkins Hospital Bulletin, 1891.
[3] Johns Hopkins Hospital Bulletin, 1898.
[4] Quoted by Cushing, loc. cit.

the operation. To these four cases he adds two additional ones. This sequence which he outlined does not seem to be necessarily limited to infection with the bacillus of typhoid fever. BLACHSTEIN[5] refers to a similar clumping of bacilli in the bile of rabbits after inoculation with the colon bacillus. The colon bacillus occurs in the bile in many fatal cases of typhoid fever. GILBERT and FOURNIER[6] divide biliary lithiasis into two groups, one due to the colon bacillus, by far the most common, and one due to typhoid bacilli. These writers, and MIGNOT,[7] have succeeded in producing experimental cholelithiasis of these two types. CUSHING has operated on one of the cases of the colon group, two years after an attack of typhoid fever. In this case the gall bladder contained many small facetted stones, in the center of which were evenly staining bacilli. Cultures from the stones were negative. The bile also contained isolated clumps of the bacilli, which possessed the cultural characteristics of the colon bacillus. The blood of the patient gave a Widal reaction to typhoid in a dilution of one to thirty.

It is extraordinary, however, to find that cholecystitis with stone may be associated with the bacillus of typhoid fever in which there is no history of any febrile attack, and in which the infection of the gall bladder seems to be primary. CUSHING reports a case of this kind. The wide-spread occurrence of the bacillus typhosus is just being recognized. Owing to the occurrence of the serum reaction many cases are clinically diagnosed as typhoid infection which may have but few of the clinical symptoms, and which, at the autopsy, may have been free from the characteristic anatomical findings of typhoid fever. A study of CHIARI's summary of these forms of typhoid fever, an editorial abstract of which was printed in the JOURNAL recently, shows that he has no division under which one could class the cases, the only evident lesion of which is in one organ and which clinically never presented any indications of typhoid. In CUSHING's case of this kind, which concerns a woman 26 years old, there was found a greatly enlarged gall bladder, with recent adhesions about it, containing gall stones. The bacteriologic examination showed on the cover-slips a few organisms, rod-shaped and with rounded ends. A comparative series of cultures demonstrated the presence of a bacillus which had all the characteristics of the typhoid bacillus, together with the serum reaction, which was controlled by the use of undoubted typhoid bacilli; and the blood serum of a case of active typhoid fever produced a similar reaction with both these organisms, while the blood serum from a healthy adult produced no clumping in either case. CUSHING therefore concludes that the bacillus found in the gall stones had the morphologic and cultural characters of the typhoid bacillus, and this conclusion, that it actually concerns the typhoid bacillus, is made practically positive by the occurrence of the Widal reaction with the serum from the patient and with the serum from a clinically typical case of typhoid fever.

In connection with this, reference may be made to a case reported by Dr. MILLER,[8] in which the bacillus of typhoid fever was found in the gall bladder seven years after an attack of the disease. This case concerns a woman 37 years old, who, in 1891, had attacks of cholelithiasis and a little later a febrile disease which was regarded as typhoid fever. Following this fever, which lasted four weeks, came a remission of about four weeks, to be succeeded by another rise in temperature lasting about one month. There occurred subsequent attacks that resembled gall stone colic. At the time of admission into the hospital she had constant pain and tenderness over the gall bladder. The diagnosis of gall stones was made, and operation revealed the presence of calculi in the cystic duct, which were removed. A bacteriologic examination of the contents of the gall-bladder showed the presence of a micro-organism which proved to be the bacillus of typhoid fever, giving the typical Widal reaction. The serum from the patient also agglutinated a known typhoid organism rapidly at one to one-hundred dilution, the reaction resembling that of an acute attack rather than one of an attack of several years ago.

[5] Loc. cit.
[6] Soc. de Biologie, 1897.
[7] Quoted by Cushing, loc. cit.

## EXPANDING VS. EXPLOSIVE BULLETS IN WAR.

The tendency of modern civilization is to more humanitarian methods even in war, but at the most it is only a tendency. The edicts of the Geneva Convention, while they should have the force of law, are like other laws, full of holes and possibilities of evasion. In civilized warfare no doubt they are expected to be observed, but a state of war is more or less a suspension of all laws, international and otherwise, and it is not probable that in all cases and under all conditions the considerations of humanity, or even the dicta of an international convention, will overrule the passions of excited warriors. As the state of the participants approaches to barbarism, this neglect of the dictates of humanity will be the more prominent, and the comparatively recent behavior of the Japanese at Port Arthur is a case in point. After all that is said, it was not so very much worse than Badajoz or Ciudad Rodrigo a little less than a century ago, when the soldiers of a Christian nation were at fault. In our own times we have the deliberate starvation of non-combatants in Cuba by a power calling itself Christian *par excellence*, whatever others may call it. War is hell, as General SHERMAN called it, and even its mitigations

[8] Johns Hopkins Hospital Bulletin, 1898.

are not all perfectly and successfully humane, in their execution at least, in spite of good intentions.

Some time back the JOURNAL noticed editorially what was apparently a palpable evasion of the prohibition of the use of explosive small arm projectiles in war, namely the Dum Dum bullet in use in the British army, which it was stated was also about to be adopted in the Russian service. A prominent surgeon, basing himself upon the results of experiments on cadavers, has positively condemned this missile as being equivalent in action to explosive bullets, in a paper read before the German Surgical Congress. He finds that it "sets up" or mushrooms in its passage through the tissues so as to widely extend the laceration of the soft parts, rendering it infinitely more serious and fatal in its effects. That its origination in a war with fanatical tribes whose rushes could not be stopped with the full coated Lee-Metford bullet, was in a measure excusable, does not better the case if the same practice is to be introduced into civilized warfare, nor does the fact that it is a spreading or "setting up" projectile instead of an exploding one alter the question if the effects are practically the same.

An English army surgeon has in a recent issue of the *British Medical Journal* taken up the defense of the Dum Dum bullet against these charges, but his argument is hardly a valid one. He gives the history of the evolution of the English bullet from the time of the old smooth bore round ball used down to nearly the period of the Crimean war, through the various types of belted, conical and other forms of projectile to the modern small caliber steel or nickel coated missile. He also describes the genuine explosive bullet used in hunting large game, and makes it clear that at least one military projectile used in the past—that of the Snyder rifle—was practically one of this type, the air contained in its cavity acting on impact like an explosive.

The higher power of modern military rifles has made some more resistant material than lead essential to prevent stripping and obstruction to the rifling of the gun, and the long pointed projectiles are therefore covered externally with a steel or nickel coating. When this coating is intact the bullet is rarely changed in shape in passing through the tissues, and the wound is therefore small and free from detached particles of the missile. When, on the other hand, the lead center is exposed at the point, as in the Dum Dum bullet, and still more when its casing is also notched or slit at the point, it spreads and becomes distorted in the wound and the harder casing, instead of being a protection to the tissues, adds to the lacerating effect. The wound therefore instead of being a mere puncture, hardly larger at the exit of the bullet than at its entrance, is a lacerated one, constantly widening in its progress through the body. The principal difference between it and an explosive bullet would therefore seem to be that it tears its way through and makes a wound of exit, instead of lodging in the tissues. This is a distinction with a difference, it is true, but it is not necessarily an important one; if the damage done to the organs is sufficiently serious it matters little whether it is extended to a wound of exit or not, and in any case there is liable to be lodgment of detached fragments of the missile.

The motive of the prohibition of explosive bullets was the especially extensive and dangerous character of the wounds produced by them, and if this same effect is brought about by other means, the spirit, if not the letter of the law, is certainly violated. It is, moreover, not a valid defense to the charges made against any appliance to say that there have been others still more objectionable. The air explosive Snyder bullet does not excuse the spreading and tearing Dum Dum projectile.

It is a fine point for military casuists to decide, how far a weapon can be allowed to be destructive without going beyond what ought to be permitted in civilized warfare. The principal object in modern warfare is to disable rather than to kill the enemy, and if modern small arms with all their advantages of long range, lightness of ammunition, etc., are not sufficiently disabling, some other methods and appliances will have to be adopted. But in no case would it seem excusable to evade in letter or spirit the humane restrictions that by international consent have been accepted as imperative in warfare between civilised peoples.

## PURE WATER FOR TROOPS IN THE FIELD.

Boiling the water is a sure way of preventing infection by the water-supply. It is a custom among the old soldiers of our regular army, who have done much scouting duty in their western service, to fill their canteens, for the day's march, with weak coffee or tea, which for practical purposes is the boiled water recommended by their surgeons; but it is not to be expected that 200,000 volunteers, hastily enrolled and equipped, could be trusted to protect themselves from typhoid fever and other infections in this way. The addition of chemicals to the water with the intention of oxidizing putrescent organic matters has been suggested; but if the water is so impure as to require their use, the simpler and better way of dealing with it is to insist on its conversion into cold tea. The use of small portable filters, to be carried and used by the individual soldier, has been urged upon the military authorities. But such filters, if issued, might be thrown away as an unnecessary incumbrance, since raw troops can hardly be trusted with the purification of their water-supplies. The purification must be done for them. To this end apparatus of various kinds for distillation have been considered. These, of course, give a sterilized water, and as arrangements may be made for aerating the water as it drops from the condenser, the distillate may be palatable as well as whole-

some; but there are practical difficulties in the way of managing such an apparatus in field service. Processes involving sedimentation are too slow to be of any use in camp life, even when these processes are hastened and their efficiency promoted by the use of such precipitants or coagulants as alum, lime or ferric salts; and electrolytic methods require a subsequent sedimentation or filtration, for their action is not that of direct purification, but merely the introduction of the hydrate of iron or aluminum into the water as a coagulant from the decomposition of the metal in the plates used. For troops in the field, filtration, therefore, appears to be the only practical method of purification.

A filter is efficient as a sterilizing medium in proportion to the fineness of its pores. When the pores are so small that water will not pass through them except when considerable pressure is exercised, as in the Pasteur-Chamberland or the Berkefeld filter, the purification is proportioned to the amount of pressure required. But in practice a layer of impalpable particulate matter, removed from the water, gathers on the outside of the filtering bougies or cylinders, blocking up their pores and putting an end to the filtration until this layer has been brushed away. The finer the pores the sooner are they obstructed. The porous cylinder which will give a sterilized water can be kept in use only by frequent interruptions for cleaning, during which its integrity is endangered. This seems to put these filters out of consideration for field use although Dr. CHARLES SMART, who used one last year on his emergency ration march with the First U. S. Cavalry in Oklahoma, states that his experience with it demonstrated the possibility of carrying on field service a machine which would supply a pure water for company use and urged that a provision of this character should be made for troops in the field. (Surgeon-General's Report for the year ending June 30, 1897, page 160.) On the other hand, filters with pores so large as to permit a free flow of water through them are necessarily inefficient. Although they may remove all particulate matters visible to the eye and give a transparent and clear filtrate, they do not remove the germs of disease. Evidently such filters are of no value for the protection of the troops. It is claimed on behalf of some of these that the thickness of the layer of filtering medium offsets the large size of the pores; but efficient filtration could be obtained in this way only by increasing the thickness until the resistance to the passage of the water was as great as in the earthen-ware cylinder, in which case there would be no filtration unless pressure was brought to bear on the water. Surgeon-General STERNBERG has, however, combined the use of the fine-grained earthenware filter and a large-pored asbestos filter in such a way as to have a free flow of sterilized water. The asbestos filter, operating under a water pressure of five or six feet, is used to free the water from its grosser particles, and the clear filtrate is then passed through the Berkefeld cylinder under piston pressure. On another page of this issue of the JOURNAL we print General STERNBERG'S circular of instructions for the use of these filters that the troops may be supplied with not merely a clear but a germ-free water.

## CORRESPONDENCE.

### WAR CORRESPONDENCE.

BY LIEUT.-COL. NICHOLAS SENN, U. S. VOLS.,
CHIEF SURGEON SIXTH ARMY CORPS.

The beating of the drum, the measured tread of an armed host are again heard throughout the land and have aroused the patriotic spirit of the American people. For a fifth time our nation is face to face with a war the gravity of which it is impossible to estimate at the present time. The first war brought us our liberty and independence; the second established our reputation on the sea; the third taught our Mexican neighbor respect for our country; the fourth saved the Union, and the fifth, which is now being waged, was provoked in the cause of humanity.

For centuries the beautiful neighboring island of Cuba has been in the greedy grasp of a foreign nation. The people to whom this gem of the ocean belongs have been downtrodden, tyrannized over and abused by the cold iron hand of an effete monarchy. The humane liberty-loving people of the United States have heard the cry of the oppressed starving Cubans for years, and have done all in their power, short of resort to the sword, to relieve their sufferings, but without avail. The ear of the proud, cowardly Spainard remained deaf to well-meant and most earnest appeals. The Chief Executive of the United States exhausted every resource to improve the condition of the native Cubans, the rightful owners of the unfortunate island, without bloodshed, but all his efforts were ignored and antagonized by the brutal oppressors.

War is always a great calamity, but when entered upon for the sake of humanity, for the relief of the oppressed, it becomes a weapon in the hand of the Almighty. The issue before us is a righteous one, and it is not difficult to forecast the ultimate result. Justice and humanity are on our side; corruption and oppression on the other. On our part the struggle is purely unselfish; on the other it is a desperate but vain attempt to ignore the claims of an enslaved people. Such are the conditions of the present war with Spain, at the same time our people will now and for all time come "Remember the Maine."

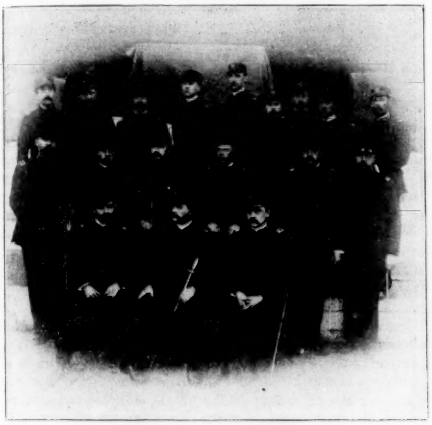
The war has begun, the deafening roar of cannon has been heard in different Spanish ports, the hero of Manila has planted the Stars and Stripes, the emblem of liberty and equality, on the shores of the distant Philippine Islands; there it will remain until the unhappy inhabitants breathe the bracing air of independence. No war was ever undertaken in which the government had such a firm and enthusiastic support from the mass of the people regardless of politics, religion, nationality and position in life.

The policy laid out, advised and carried in effect by President McKinley, meets with the undivided support of the reunited nation. The gray is eager and anxious to don the blue in his country's cause. Federal and Confederate meet again to talk over the memories of the past at a common camp fire during the campaign against a common foe, who has been permitted far too long a time to abstract the life blood of an innocent people, the legitimate owners of one of God's most beautiful islands so close to our own great, forever free and united country.

ILLINOIS ARMY.

Illinois has always been in the front when our country was

in danger. Its record during the War of the Rebellion stands foremost in the history of the nation. It gave to the nation Abraham Lincoln, who, during the dark days of the Rebellion, guided the Ship of State through many a storm and many a danger into a harbor of safety and gave freedom to a despised and degraded race. It gave to the nation Grant, who led the army from victory to victory, until the misguided but determined foe was willing to sue for peace and accept the terms offered by its conqueror. It gave the nation a Logan, whose heroic and gallant deeds brought terror to the enemy. It gave the nation an army of soldiers who took an honorable and heroic part in the deadly conflict. It gave the nation Dick Oglesby, the intimate friend of Lincoln, who happened to be in Washington on the memorable night of Lincoln's assassination. The moment the fatal shot was fired he was summoned, and when he arrived at the entrance of the house to which Lincoln had been taken, he was confronted by an armed guard who refused him admission. There was no time for argument; the sturdy Governor grasped the guard by his collar and pushed him aside like a toy, with the words, "I am the Governor of Illinois, get out of my way!"



Surgeons of the National Guard and Illinois Volunteers.

Illinois will do her share in the present conflict. When the War Department called for troops, the message was received by Governor Tanner on April 26. After a brief consultation with Adjutant-General Reece, the button was touched flashing the order over the wires to the regimental commanders in different parts of the State, and in less than thirty six hours 10,000 men were at the State Fair Grounds at Springfield ready to do their duty. General Barkley, the senior Brigadier General, was placed in command of the post, which he named Camp Tanner, and thanks to his foresight, energy and knowledge of military art, the troops received proper shelter and were assigned to their quarters immediately upon their arrival. Adjutant-General Reece demonstrated by every act that he was master of the situation. There was probably never a time when upon such short notice a temporary camp for so large a force was made more comfortable and efficient. Both of these officers, as well as their subordinates, are entitled to great credit and to the thanks of the good people of Illinois for having acted so promptly and wisely to efficiently meet such an emergency. The newspaper reporters and visitors to the camp were astonished by the fact that no complaints were made either by officers or men. Considering the limitations of equipment, the number of men in the camp, the unprecedentedly disagreeable weather and the short notice, this must certainly appear as the most satisfactory proof of the intense patriotism which animated every man and made him ignore his physical requirements in the thought that he was called upon to discharge a duty to his country.

A few days after the arrival of the seven regiments of infantry and the First Regiment of Cavalry, Captain Yeager of Battery A, First Artillery, appeared in camp with a splendid body of well drilled men, which added much to the military appearance of the camp. The representatives of the United States army, Lieutenant-Colonel Roberts, Captain Swift and Lieutenants Ballou, Cole and Davis were on the field early and rendered invaluable service in the organization and mustering in of the troops. It was indeed pleasant to observe the harmony in word and action which prevailed between these officers of the regular army and the officers and men of the National Guard. This war will do much in cementing together more closely the professional and citizen soldier. In less than four weeks all of the troops were examined, mustered into the United States service and turned over to the Government.

The Fifth and Third Regiments of Infantry were the first to leave Camp Tanner amid the cheers of their comrades left

Group of Hospital Stewards Illinois Volunteers.

behind. In due time they reached their appointed station, Camp George H. Thomas, Chickamauga, Ga. The Sixth Infantry was next ordered to Camp Alger, Falls Church, Va., near Washington, and the First Infantry a few days later joined their comrades of the Third and Fifth Regiments at Chickamauga. The Second Infantry was then ordered to Tampa, but en route received notice to report at Jacksonville, Fla. The Fourth Infantry, after considerable delay, was ordered to Tampa, the Seventh Infantry to Virginia, and the First Cavalry is now on its way to Camp Thomas, Chickamauga.

GOVERNOR TANNER.

The office of governor of a State is always important and responsible, but especially so in time of war. The citizens of Illinois have reason to congratulate themselves that during the last election their choice fell upon the right man at the right time. Governor Tanner has shown that he is made of the right metal for an effective and wise war governor. His experience during the late war as a private has been of great value to him in meeting the duties of the hour. He knows what it is to serve in the ranks, and has therefore taken the deepest interest in the welfare and comfort of every soldier who has come to the camp. He is a staunch friend of the common

people (the backbone of the nation), and has catered but little, if any, to the whims and fancies of the silk stocking element. He is now more popular than ever with the National Guard. He takes pride in his army. He imbues every soldier with the idea that the highest position is within his reach if he devotes himself to his legitimate duties. He has strained every nerve in bringing his troops to the front, and has had the satisfaction of seeing an Illinois regiment the first to be mustered into the volunteer service of the United States, and that the State he represents has thus taken the lead as regards promptitude and dispatch in answering the call of the President for volunteers.

Our Governor is intensely patriotic; he has shown this in every act in the organization and equipment of the troops. It is not generally known that Governor Tanner is a great orator; the speech which he made at a banquet he gave to the officers of his staff and of the regiments in camp, was a revelation to every one present. He seemed to be inspired; his eyes flashed: every nerve and muscle responded to his intense emotion; every word and thought found a hearty response in the hearts of his profoundly interested audience. I doubt very much if he will ever be able to duplicate that speech, because such an occasion comes but once during a man's life. It was a speech which left a deep and permanent impression, a speech calculated to make a man better and more devoted to his country and his country's flag.

The Governor has visited the camp daily and always has a cheerful word and a pleasing smile for every one he meets, privates and officers alike. John R. Tanner will go down in history as a famous war governor, a worthy successor to Governors Yates and Oglesby.

MRS. TANNER.

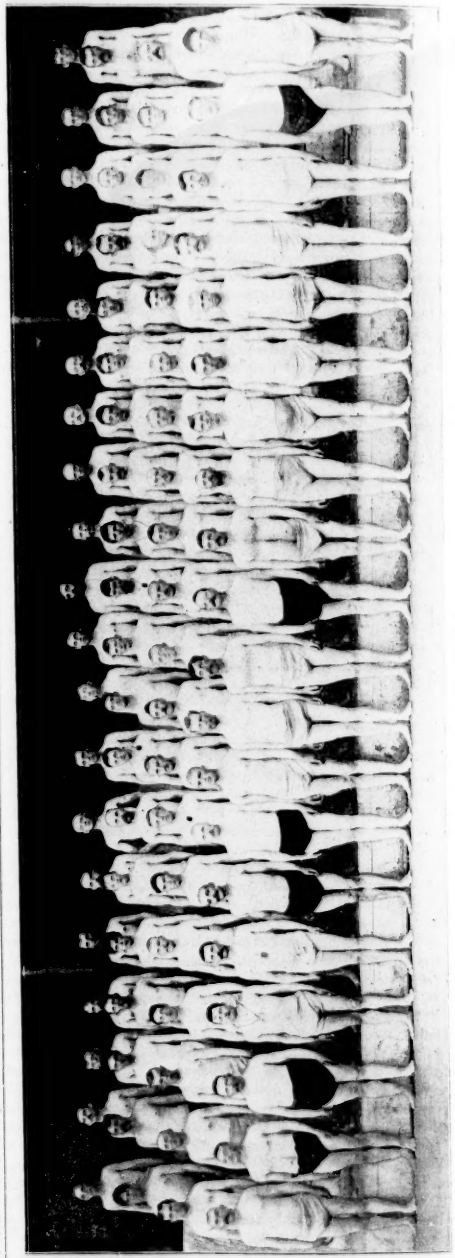
The beautiful, youthful and accomplished wife of our Governor came to the Executive Mansion at the right time. She takes great interest in the work of her distinguished husband. She is a great favorite with the people of Springfield. She is ready in conversation and quick in perception. She visits the camp frequently and takes an active interest in the care of the sick. Her cheerful disposition and her tender care of her husband have done much to lighten the heavy burden and many perplexities, which have been resting upon the shoulders of our overtaxed Governor since he assumed the duties of his office, and more particularly since the declaration of war with Spain.

THE CAMP GROUND.

When the sudden call for troops came it was an important matter to select a camp centrally located and adapted for the season of the year. The officers of the State Agricultural Society came to the rescue of the military authorities and offered gratuitously the State Fair Grounds for the use of the troops during mobilization. The grounds occupy 160 acres of land, north of the city limits, and are easily accessible by a line of electric cars. The surface of the ground is undulating and divided by several ravines well adapted for effective surface drainage with a little expenditure of time and money. The subsoil is of clay, which in combination with the continued rains made the streets pools of mud for more than a week, a destroyer of foot gear and a rich harvest for the bootblack.

The permanent buildings were well adapted for temporary quarters for the imperfectly equipped soldier. For two weeks two of the regiments lived in tents. The camp was supplied with filtered water from the Sangamon River. A specimen of the water was sent for analysis to Dr. A. W. Palmer, professor of chemistry at the State University, who pronounced it wholesome and practically pure.

A sufficient number of sinks were dug and boarded in and the dejecta were daily covered with dry earth. Fresh straw was furnished in abundance. The rations were satisfactory both in quantity and quality.



Company B, 7th Regiment Ill. Vol., after the medical examination.

EXAMINATION OF SURGEONS FOR THE UNITED STATES VOLUNTEER SERVICE.

Soon after the troops reached Camp Tanner an order was sent from the War Department to Governor Tanner, making provision for the formation of an Examining Board. This board was to consist of one surgeon from the United States Army and two National Guard surgeons. The Government detailed Capt. H. P. Birmingham, U. S. A., stationed at Chicago, and Governor Tanner appointed Surgeon General Senn and Brigade Surgeon C. C. Carter of Rock Island, as members of the board. The duties of this board were to consist in the examination both as to physical condition and professional attainments of applicants for commissions in the Medical Department of the United States volunteers and the National Guard volunteer forces. The board was organized at once and proceeded to examine applicants for the Medical Department. The following blank was drawn up, typewritten, and presented to each applicant to fill out:

Applicants for the volunteer service are respectfully requested to fill out carefully the following blanks:

1. Name ——. 2. Age ——. 3. Height ——. 4. Weight ——. 5. Family history ——. 6. Physical defects, if any, either of congenital or acquired sources ——. 7. Residence and P. O. address ——. 8. Command, if any ——. 9. Place and date of graduation ——. 10. Professional or scientific study and investigation, other than military ——. 11. Foreign languages studied ——; *a*, able to speak ——; *b*, able to translate ——. 12. Subjects or titles of books written or published, essays prepared, lectures delivered or papers read, when and where ——; *a*, No. ——; *b*, ——; *c*, ——. Remarks ——.

The physical examination was made in a very thorough manner, the man being stripped, and demonstrated that the candidates for commissions in the Medical Department compared favorably with the line and field officers. Out of the whole number only three were rejected.

It was the intention of the Board, in view of the fact that most of the candidates had done good service in the National Guard for a longer or shorter period, to make the examination as broad and practical as possible. The following are some of the subjects on which the examination was conducted:

*Anatomy and Surgery.*—1. Give the origin and distribution of the pneumogastric nerve. 2. Mention the bones of the carpus and give their relative locations by illustration. 3. Describe the innominate artery and give its relations to surrounding structures. 4. Enumerate the different hemostatic measures and describe their technic and indications. 5. Detail the treatment of recent compound fracture of the leg. 6. Describe the different amputations through and below the ankle joint and mention the names of the surgeons who devised them.

*Hygiene.*—1. Give your ideas on the selection and sanitation of camps. 2. The prophylaxis and treatment of sunstroke. 3. How would you determine, in the field, in a general way, the salubrity of the water-supply, and what measures would you take for preventing its pollution?

*Military surgery.*—1. Give method of treating (temporary) gunshot fracture of the thigh, on the field, and when and how would you remove the patient? 2. What is the effect produced by modern small jacketed bullet, compared with the old large caliber missile? 3. Give method of procedure in rendering first aid to, and removal of, wounded from fighting line to field hospital.

*Practice of medicine.*—1. Describe pneumonia: Definition, etiology, morbid anatomy, symptoms, complications, prognosis, termination, diagnosis, treatment. 2. Describe cerebrospinal meningitis: Cause, pathology, symptoms, diagnosis, prognosis, treatment. 3. Describe diseases most liable to occur in tropical countries, with short description of causes, symptoms, pathology, prophylaxis, diagnosis and treatment.

*Materia medica.*—1. What are the more common forms of mercury used in medicine? Write prescriptions for four. 2. Mention the comparative advantages of ether and chloroform as anesthetics. 3. Indications for the use of emetics, cathartics and alcohol.

The minimum standard was fixed at 70. It was a source of great gratification to the Board that, notwithstanding the fact that many of the applicants had been busy practitioners for years, the papers they turned in were of a high character. The result of the examination shows that in these applicants the State had desirable material for service in the volunteer regiments.

The fact that the revised code of the Illinois National Guard made provision for five surgeons to each regiment and the regulation for the United States Volunteer Service called for only three, made it necessary for the junior assistant surgeons of some of the regiments to return unwillingly to their respective homes.

As soon as the results of the examination were announced, the assignments were made. The following is a list of the medical officers of the volunteer forces of Illinois:

First Infantry. Surgeon, W. G. Willard; Assistant Surgeons, T. E. Roberts and C. B. Walls.

Second Infantry. Surgeon, G. F. Lydston; Assistant Surgeons, J. G. Byrne and G. P. Marquis.

Third Infantry. Surgeon, J. B. Shaw; Assistant Surgeons, A. F. Lemke and C. E. Starrett.

Fourth Infantry. Surgeon, T. C. McCord; Assistant Surgeons, C. M. Galbraith and G. E. Hilgard.

Fifth Infantry. Surgeon, M. R. Keeley; Assistant Surgeons, E. A. Ames and J. L. Bevans.

Sixth Infantry. Surgeon, F. Anthony; Assistant Surgeons, C. A. Robbins and L. S. Cole.

Seventh Infantry. Surgeon, T. J. Sullivan; Assistant Surgeons, G. W. Mahoney and F. P. St. Clair.

First Cavalry. Surgeon, W. Cuthbertson; Assistant Surgeons, T. J. Robeson and J. Rowe.

Battery A, First Artillery. Hospital Steward, Dr. Jackson.

PHYSICAL EXAMINATION OF FIELD AND LINE OFFICERS AND ENLISTED MEN.

The examinations were conducted at the Senate Chamber of the State House from 9 A.M. to 6 P.M. daily, with an interval of an hour for lunch. The Board of Examiners was assisted by the regimental surgeon of each regiment and his assistants. The officers were examined separately in the Lieutenant-Governor's room. One of the assistant surgeons took the chest expansion, another examined the eyes and ears and a third the head, mouth, pharynx and neck. The Surgeon-General examined the lower extremities and abdomen, and Captain Birmingham the chest and the general aptitude for active service. Colonel Carter acted as clerk in conjunction with a number of the field and line officers.

The following blanks for physical examination were drawn up, and 10,000 copies were printed and distributed to the various regiments:

PHYSICAL EXAMINATION.

Name ——. Rank ——. Co. ——. Regiment ——. Age ——. Residence ——. Chest Expansion ——. Inspiration ——. Expiration ——. Are you subject to coughs or colds? ——. Have you ever had any serious illness? ——. Are you subject to sore throat? ——. Discharge of the ear? ——. Rheumatism? ——. Stiffening of the joints? ——. Hemorrhoids or piles? ——. Fistula? ——. Diarrhea or dysentery? ——. Do you believe you are sound and well now? ——.

Soon after the arrival of the Surgeon-General an order was issued instructing the regimental medical officers to make a preliminary physical examination of the recruits, which resulted in the return to their homes of several hundred men physically unfit for duty and which materially assisted the work of final examination. The most unenviable part of the examina-

tion fell upon the shoulders of the Surgeon-General, who for the purpose of quickening and lightening his duties devised the following commands: Heels together! Turn around! Turn back! Cough! Cough harder! which commands afterward became a favorite and familiar chorus among the men who passed the final ordeal to the satisfaction of the Board. On an average, it was found possible by following the thorough system adopted, to examine from 800 to 950 recruits a day. In all, 9890 men were examined.

The most common causes for rejection were hernia, varicose veins of the lower extremities, poor physique, heart disease, imperfect chest expansion, loss of teeth and flat foot. The presence of varicocele of different degrees in men otherwise apparently in good health was marked. It was found that nearly 25 per cent. of all those examined presented a condition of varicocele of some degree. Only two recruits were rejected for this cause, as in their cases the varicocele appeared to be

an acknowledged source of pain. In all the rest the statement was plainly made either that the applicant had no knowledge of the condition, or that it gave rise to no inconvenience. In probably one-half of all the cases the subjects were ignorant of the existence of this condition. The same remark may apply to flat foot as a cause of rejection, inasmuch as the deformity appeared to be extremely common, but only in a few isolated cases was it a cause of pain and consequently of disability for the volunteer service. The rejections for good and substantial causes were less than 10 per cent. This was influenced somewhat by the thoroughness with which the preliminary examinations had been conducted. The proportion of rejections was, on the whole, larger in the country regiments than in those made up of Chicago men. A great many men who passed the physical examination returned unwillingly to their homes by reason of the regulation reducing the number of men to a company from 109 to 84.

The intensity of the patriotic feeling which pervaded the men in camp is best shown by the illustrations which accompany this communication. The word "rejected" in many instances seemed to make a more profound impression than would a death sentence. The disappointment would be such that the soldier was often speechless, pale, staggering, and in not a few instances hot tears would roll down the bronzed cheeks as the best evidence of the deep regret of the recruit in being deprived of the great privilege of defending the honor of his country. On the other hand, the successful soldier would accept active service with a smiling countenance and would bound away into the dressing-room like a deer pursued by hounds.

SCHOOL OF INSTRUCTION FOR MEDICAL OFFICERS.

The second day after the Surgeon-General arrived at the Camp, he sent a telegram to Professor A. D. Bevan of Rush Medical College, Chicago, requesting him to send by the earliest train a cadaver for anatomic demonstration, and a course of operative surgery. The cadaver arrived promptly and a small amphitheater was extemporized in the Assembly Hall, which served as headquarters for the Third and Sixth Infantry. The hours between 8 and 10 P.M. were utilized in giving

LIEUTENANT-COLONEL ROBERTS.

lectures, anatomic demonstrations, and a course in operative surgery. In this course not only the medical officers, but the members of the hospital corps took an active interest. The Surgeon-General domonstrated on the cadaver emergency operations with especial reference to military surgery; one of the assistant surgeons made a dissection every day, and in the evening demonstrated his work to the class. Among the demonstrations made were the following:

Major Lydston, operations on the urethra and bladder. Major Cuthbertson, hernia operations. Major Adams, osteoplastic resection of the skull. Colonel Kreider gave a lecture at St. John's Hospital, Springfield, on Sterilization in Surgery, demonstrating his remarks by the exhibition of the means employed in the hospital for this purpose. Among the lecturers were the following: Colonel C. C. Carter, "Prescribing in Military Practice." Major Adams, "Shock and Sunstroke, and Temporary Hemostasis." Major Sullivan, "Temporary Dressing of Fractures." Major McCord, "Prevention and Treatment of Camp Diarrhea." Captain Mahoney, "Prevention and Treatment of Gonorrheal Ophthalmia." Lieutenant

Hilgard. "Treatment of Dysentery." Lieutenant Stanton, "Administration of Anesthetics." This School of Instruction was continued for nearly four weeks, and was found to be interesting, useful and well calculated to prepare the medical officers for their future work in the field. Those who took an active part in the teaching had the moral support of both field and line officers, who did everything in their power to encourage them in their work.

LECTURES ON FIRST AID.

On May 10, the Surgeon-General issued the following order: "Regimental surgeons are requested to give officers and men in their commands instruction in first aid or self help, as the case may be, in the following subjects: Diet and drink in health and disease. Care of the person, bathing, clothing, feet, etc. What to do in sunstroke. Temporary treatment of fractures. Temporary arrest of hemorrhage. Transport of injured men. Application of first aid dressings. The illustrated triangular bandage will be furnished, to be displayed in a conspicuous place in company quarters so that every man may understand its application."

These lectures were well attended and proved of signal value in preparing the line officers and men in the use of the first aid package, and in the prevention and treatment of hemorrhage, as well as enlightening them on the subjects of hygiene and sanitation.

VACCINATION.

On May 12, the Surgeon-General issued the following order: "To all surgeons and assistant surgeons:

"Vaccination by regiments will take place as soon as they are mustered. You are directed to operate according to the following rules, assisted by your hospital stewards:

"1. The left arm is to be bared. A space four inches square at the outer border of the deltoid midway between its origin and insertion is to be thoroughly scrubbed with warm water and potash soap, then cleansed with alcohol and finally washed with pure water and dried with a pledget of absorbent cotton.

"2. The arm is to be lightly scarified where cleansed for a space of one-half inch square. Both ends of the vaccin tube are to be broken off, and the virus blown on the wound with the rubber bulb furnished, and thoroughly rubbed in with the point of the lancet. The lancet is to be cleansed with alcohol after each scarification.

"3. The arm is to be left exposed until thoroughly dry. A pledget of sterile cotton two inches square, is to be placed over the wound and held in place by an adhesive strap one-half inch wide and four inches long."

There is reason to believe that the above specific directions did much in the prevention of septic complications.

CAMP DISEASES.

The season of the year at which the troops were called out, the crowded condition of the camp, the imperfect equipment of the men, the continuous rain for over a week, and the changeable temperature were influences well calculated to test the strength and power of resistance to disease of the men who sought the service of the Government.

The appearance of cerebro-spinal meningitis on the first day the troops were in camp in the case of a man of K troop, First Cavalry, excited much interest, and as this was followed in rapid succession by three additional cases in other commands, led to a thorough investigation as to the origin and spread of this disease. This investigation was conducted by Lieutenant Colonel Kreider pursuant to an order from the Surgeon-General. Colonel Kreider presented the following report:

CAMP TANNER, SPRINGFIELD, May 23, 1898.

COLONEL N. SENN,

Surgeon-General, I. N. G., Camp Tanner, Ill.

*Sir:* Pursuant to your order to investigate the origin and spread of the cases of cerebro-spinal meningitis which have occurred at this camp, I have the honor to report that up to this time three cases have appeared, all of which have resulted fatally.

1. Ernest Royal Parish, of Troop K, First Cavalry. On my request, Major William Cuthbertson assigned to the First Cavalry made the following report: "He was ailing for some days prior to enlistment. While waiting at Tattersall's at Chicago I have ascertained that he was compelled to lie down, but was up and able to pass inspection. He was taken violently ill on the train on the way down, with chills and vomiting. On reaching Springfield in the morning he was unable to walk and was removed to the Post Hospital on a stretcher. As soon as possible he was transferred from there to St. John's Hospital, where he now lies. I have just learned that another case of this disease exists at Western Springs, the patient's home." Parish died May 1. As stated in Surgeon Cuthbertson's report, he had not placed a foot on the camp ground, and his stay there did not exceed half an hour.

2. Edward B. Beebe, of the Third Infantry, residing at Elgin, was sent to the Hospital May 13 by the Surgeon of the Regiment on the eve of its departure, and was first seen by me on the following morning. In the afternoon I found him delirious, so that he required restraint and constant watching, which was given by a hospital steward of the Second Infantry. He died May 15.

3. Robert Leland, of Third Infantry, residing at Ottawa, was first seen by me at the camp at 6 P.M., May 14, and, as all ambulances were in use, was conveyed in my buggy to the Hospital. Assistant Surgeon Lemke writes of the onset of the disease as follows: "I saw him at noon, when he was complaining of intense headache. He became delirious the same night, although he was rational when aroused." The disease ran a very rapid course and death occurred May 17 at 11 P.M. From his family physician I have learned that a sister aged 20 and a brother aged 15 had died of tuberculosis. As ordered, I had intended holding a postmortem on this case, but the body was removed from the Hospital at 2 A.M. by his father.

The disease in the first case may be traced to other cases in his home town. He was not associated in any way with the men of the Third Regiment, and it seems hardly probable that the disease could have been transmitted from him to the others. It seems probable that the disease in the Third Infantry was caused by the crowded and poorly ventilated quarters which this regiment occupied, or by the damp straw on which they slept. Each of these conditions was caused by the weather prevailing during the stay of this regiment at the camp. Because of the rains the men did not leave the building during the day, and thus the rooms became foul. I called the attention of the Surgeon of the Regiment to this foul odor early in the tour; because of the rain also, the straw was brought in damp and may have figured in causing the trouble.

Respectfully,

[Signed] GEORGE N. KREIDER, Post-Surgeon.

Among the other camp diseases must be mentioned pneumonia, measles and mumps. The pneumonia contracted in the camp proved to be of an unusually malignant type. Of the thirty-two cases only two died, a mortality of about 6 per cent.

Upon the outbreak of measles an isolated part of camp ground was selected for an isolation hospital, and placed under guard with a yellow flag in front of the hospital tent. Three cases of measles and three or four cases of mumps occurred. The patients were placed in separate hospital tents, and as soon as they recovered from the illness were subjected to a thorough disinfection and their clothing disinfected before they were allowed to return to duty. This isolation of patients suffering from infectious diseases proved effectual in the prevention of a further spread of the diseases.

The ranks of the medical department were broken at an early date by the untimely death from pneumonia of Assistant Surgeon Cole of the Sixth Infantry, who was taken ill while

en route with his regiment to Washington, and died at Fort Wayne, Ind. Upon receipt of the news of his death the medical officers drew up the following resolutions:

WHEREAS, By the untimely death of our comrade, Lieutenant L. S. Cole, Assistant Surgeon, Sixth Illinois Infantry, U. S. A., a career of brilliant promise has been cut short, be it

*Resolved*, That in the death of Lieutenant Cole the State of Illinois has lost a valuable medical officer and the medical profession an efficient and able member.

*Resolved*, That we, the members of the Medical Department, of the Illinois National Guard and United States Volunteers at Camp Tanner, extend to his bereaved family and friends our condolence and sincere sympathy.

*Resolved*, That copies of these resolutions be sent to his mother, and to his regiment.

(Signed.)

T. J. SULLIVAN, Major und Surgeon Seventh Infantry.
T. C. MCCORD, Major and Surgeon Fourth Infantry.
Wm. CUTHBERTSON, Major and Surgeon First Cavalry.
S. C. STANTON, First Lieut. and Ass't.-Surgeon, I. N. G.
Committee.

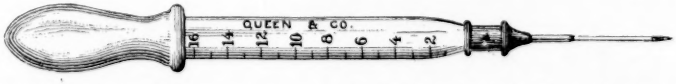
With this communication my official connection with the National Guard of Illinois is temporarily severed, as I have been mustered in as Lieutenant-Colonel and Chief Surgeon, Sixth Army Corps, U. S. V., to be assigned to the command of Major-General Wilson, Camp George H. Thomas, Chickamauga, Ga.

## NEW INSTRUMENTS.

### A SIMPLE ASEPTIC HYPODERMATIC AND LACHRYMAL SYRINGE.

BY SHIRLS JACKSON, M.D.
PITTSBURG, PA.

Any one who has been called upon suddenly, without adequate preparation, to use the hypodermatic syringe and found the latter out of order will appreciate a syringe that can not get out of order. The average syringe seems to spend its spare time collecting septic matter to render the injection an emulsion of dirty fat. The syringe shown in the illustration was intended primarily for ophthalmologic work, where delicacy of manipulation and thorough asepsis are imperative. In 1890 the original instrument was made for me and is still in active service.




Aside from the needle there are but two parts to the instrument; glass barrel and compression bulb. The compression bulb is that of the ordinary medicine dropper, to be had anywhere, and may be replaced in an instant. In addition to the fine needles, one of slightly larger caliber with conical point properly curved for injecting the lachrymal canal is used when the instrument is desired for this purpose. The difficulty of attaching the ordinary dropper bulb in a manner to withstand firm pressure without leaking is overcome by giving that part of the barrel a mat finish. This gives a perfect result. The caliber of this end of the barrel is so reduced and drawn out that the fluid in the barrel does not enter the bulb. The bulb of the syringe is held between the thumb and first finger, the other extremity guarded by the fourth and fifth fingers. Simple pressure, at right angles to the direction of thrust, injects the fluid without moving the needle, giving greater delicacy of manipulation than is possible with the ordinary syringe, on account of the uneven caliber of the barrel of the latter, and the firm pressure required.

Excepting the needle, there is no metal to corrode or wear out and leak; there are no sharp angles, no caps, threads, packing nor other receptacles for dirt; no regurgitating around the piston and up the operator's sleeve, and it can not dry out or get out of order. To any one who has ever removed the piston from a syringe and tried to replace it, comment upon repairs would be superfluous. There is no piston to repair.

## PUBLIC HEALTH.

**Pollution of the Passaic River.**—The New Jersey courts have now before them a prosecution of the City of Paterson by Jersey city to restrain the former from continuing to discharge its sewage into the Passaic River. An argument was recently made before Chancellor McGill which will, if decided in favor of the plaintiff, be the first step toward compelling Paterson and some other filth contributors to provide a modern sewage-disposal plant. The importance of this pending litigation to the public health and property values in and for the entire State of New Jersey, as well as in certain of its great cities, is great and far-reaching.—*Medical News.*

**Addition to Quarantine Regulations as to Consular Bills of Health.**—Referring to Treasury Department Circular dated April 26, 1894, United States Quarantine Laws and Regulations, and to Article I, paragraph 2, regulations to be observed at foreign ports, Secretary Gage issued instructions April 12, 1898, stating that the following addition is made to the consular bill of health (Form 1931 *a*), to be furnished vessels bound for the United States, viz.: "Number of cases of sickness and character of same while vessel was in this port, ——."

**Duty of Health Officer to Attend Smallpox Cases.**—In the case of Reynolds vs. the City of Mt. Vernon, the second appellate division of the supreme court of New York reversed, March 22, 1898, a judgment allowing the health officer of the city $355 extra compensation for attending three smallpox cases. One of the cases he took charge of because the physician whom he had employed under the authority of the board of health to attend it did not prove satisfactory. In another case, when he reported it, he stated to the board that he would like to make what money there was in it; and thereupon the board passed a resolution that "the health officer be authorized to employ two watchmen, a trained nurse, at $5 a day, and attend to the case himself." As health officer of the city he was a member of the board of health, but did not vote on the resolution; and he drew a salary of $75 per month, which had been prior thereto fixed by the board. Judgment was given in his favor at the trial term upon the ground that the services he rendered were additional to the duties devolved upon him as health officer, and being of an extra hazardous character entitled him to extra compensation at the rate charged. But, while it says that the board of health undoubtedly had power to authorize the employment of other physicians, and create a legal charge therefore against the city, yet the appellate division does not think that the officer himself could exact extra compensation for the service which he rendered, upon the basis that such service was extra hazardous. It maintains that, although the statute under which the board acted did not specifically define the duties of a health officer, the nature of his employment and the purpose of the creation of his office sufficiently designated the character of the duties he was to perform, which it thinks necessarily embraced the character of service which was rendered in these instances. The fact, if true, that the city had prior to this time paid to another health officer extra compensation for such service, the court further maintains, did not have the effect of creating a valid claim against the city for the services in question rendered by this health officer.

**A Tuberculous Residence.**—The *Ohio Sanitary Bulletin* contains Dr. Gaston's story of a house at Mineral Ridge, Ohio, so manifestly the confirmed habitation of tuberculosis that the townspeople are anxious to see it destroyed by fire, so soon as it can be vacated. The writer has been informed that it was thoroughly disinfected about one year ago; that the building is very damp and the cellar in bad condition, and that in no way will other residents of the town be satisfied until it is fired. The mother of the family has refused to give up the house, although urged to do so by the remaining children. The local board of health has discussed this matter and now asks the State board to take such action as it may deem best. The house was constructed about 1830 and was occupied by a family by the name of F. It is related that a young man who lived with the family was "always ailing and in delicate health," but the only death at that time was that of a baby with bowel trouble. They resided in the premises until 1846, when the house was occupied by a family named S. They were an unusually strong and healthy family when they first came to this place, with no previous tubercular history. The first one connected with this family to pass away was a lady boarder, but information does not reveal the cause of her death. It was quickly followed, however, by the death of two sons, two daughters, father and mother, from tuberculosis, leaving only one son, who had previously gone to Illinois on account of his health, and who still survives. From 1879 till now the house has been held by the present occupants. There is no history whatever of consumption in the family prior to their coming to this house. The daughter who died recently was born here. Her death was the seventh in the family in as many years, from tuberculosis. A sister, two brothers and a mother survive, but the characteristic traces of the disease are plainly visible in faces of one brother and the surviving sister. The building is a story and a half high and surrounded by dense foliage.

**Sanitary Supervision of Schools in Respect of the Control of Infectious Diseases.**—Dr. Dudfield, a London health officer, has been led to discuss the above subject. There is no denying the general over-crowding of these schools which was favored by the regulations of the Education Department. The superficial and cubic space per head required for calculating the accommodation of the school was far too small; while 350 cubic feet was the lowest allowance in factories 120 was fixed by the department for schools, which to maintain a purity of .02 per 1000 of CO would demand a renewal of the air twenty-five times in an hour. But even this scanty allowance might be curtailed under certain conditions. This was dependent on the interpretation of the expression "habitual" in Clause 73 of the Code, which stipulated that the average attendance should not habitually exceed the legal accommodation by more than 15 per cent. The intention was to avoid the exclusion of a child from the appropriate class pending redistribution and the drafting of a number in excess to other classes. Memoranda and instructions had been issued interpreting the expression so as to discourage overcrowding, but it was evident that the teachers took it as permitting serious overcrowding during certain months to compensate the scanty attendance in others so long as the average for the whole year did not exceed the accommodation more than 15 per cent., a practice to which the payment to the head of the teachers of a proportion of the grants still retained in many voluntary schools was a strong inducement. It was, however, clear from Mr. Acland's explanation that the permission extended only to the temporary and unavoidable over-crowding of particular class rooms which it was the duty of the teacher to relieve as soon as possible by drafting the scholars or redistributing the classes and to occasional aggregations of the children in the principal hall or otherwise. Inadequate, however, as was the cubic space in the schools the conditions of many of the homes are no better, and the gravity of the matter lay rather in the influence of over-crowding on the spread of diseases, among which measles, not notified, widespread, highly infectious, and causing on the whole more deaths than scarlatina and several other fevers put together, was that which had the greatest influence on the attendance, and led most often to closure and other forcible interference. The *Lancet* in considering the duty of officials as to measles and whooping cough commends the decision recently made by the Scotland Local Government Board in the direction of excluding children from school when known to be ill from those diseases, regarding it as a move in the right direction, though we fear that in times of epidemic measles and whooping cough the medical officer of health will have a somewhat busy time; doubtless, however, his emoluments will be correspondingly increased. The gradual growth of public opinion in favor of controlling those infectious diseases which hitherto have been allowed to run riot as their nature prompted them is one which will have to be encouraged gently and discreetly by the public health service. Reform lies rather in the direction of educating the public to the necessity of caution than, in the first instance at least, in resorting to injudicious prosecution. If we are to reduce the mortality from such diseases as measles and whooping cough, the exercise of tact on the part of the medical officer of health is of the utmost importance, and it is only by this means that we can gradually educate the public for the more stingent measures which may ultimately have to be taken.

## BOOK NOTICES.

**The Fireside University of Modern Invention, Discovery, Industry and Art.** With complete indexes by JOHN MCGOVERN. Pp. 545. Chicago: M. B. Downer & Co., Union Publishing House, 1898.

This is a book for the masses of the people and every person may derive benefit from reading it. From the publishers' preface we extract the following: "The spirit of this book and the need for it are illustrated in the following fact: covering one, two, three, four, five city blocks, there arises the enormous glucose factory, grinding one hundred thousand bushels of corn daily. The people look with wonder upon this rising and increasing pile of buildings (whose inmates seem to be forever at toil) with no thought that at the beginning there was only a chemist at work in his little laboratory, developing certain ideas. Between his ideas, his hopes, his glass tubes and his multitudinous apparatuses and this monstrous concrete thing called the glucose factory, there is an astonishing gap in the people's knowledge. How did it come to develop so completely, before they had grasped even the idea of the chemist and the inventor? The glucose factory gives but a single illustration of what has happened on every side of us. The nickel plated ornaments, the finely spun fabrics, the beautifully colored prints, the swiftly flying street cars, the glowing splendor of the modern night lit with thousands of incandescent lamps, the astonishing cheapness of all articles that were once so costly that only a king could buy them—these things are here considered." The contents of the volume are: Electricity; X-ray; condensed air; bread, cakes and pastry; butter, cheese, etc.; fruit; nuts; spices; coffee and tea; meat; pickles, vinegar, etc.; salt; spectroscope; chemistry; sugar; the bicycle; soap; light and heat; ice; clothes; india rubber; needles and pins; glass; paper; china; matches; astronomy. The illustrations are numerous. The scientific and historic information contained in the volume is enormous. Each chapter is complete in itself. The whole is taught by questions and answers, and the literary skill of Mr. McGovern has brought out the information in the most agreeable way. Few men past 40, however cultivated, have kept pace with the discoveries whereby our civilization has taken on its new conditions imposed by electric and chemic advances. This book will give them in brief compass a fair knowledge of the subject. For the young and for students it is invaluable.

**Medical and Surgical Report of the Presbyterian Hospital** in the city of New York, Volume iii, January, 1898. Edited by Andrew J. McCosh, M.D., and Walter B. James, M.D. Boards. Pp. 414. Illustrated, New York, 1898.

Besides lists of officers, staff, etc., the report contains the

following papers, many of which are accompanied by full-page illustrations of cases and temperature charts: "On Some of the Collateral Functions of a Hospital;" "An Unusual Case of Recurrent Multiple Neuritis of Uncertain Causations with Paralysis of the Phrenic Nerve—Recovery;" "Hydrochloric Acid Determinations in Gastric Contents;" "Contribution to the Surgery of the Pelvis of the Kidney;" "A Contribution to the Study of the Bacteriology of the Blood in Disease;" "Unusual Complications of Enteric Fever: 1. Suppurative Thyroiditis. 2. Purpura. 3. Eczema. 4. Neuritis of Arms. 5. Acute Cardiac Dilatation;" "A Report of Two Dermatologic Cases Complicating Cardiac Disease;" "The Malaria Fevers of New York City;" "A Report of Cases of Operation Upon the Gall-Bladder and Bile-Ducts;" "One Year's Experience with the Widal Test for Typhoid Fever;" "A Report of Three Unusual Cases of Appendicitis;" "A Case of Persistent Hiccough Yielding to Applications of Ice over the Diaphragm and to the Back of the Neck;" "A Study of a Series of Cases of Enlargement of the Thyroid Gland Examined with Special Reference to their Histology;" "A Report of Fifteen Cases of Abscess of the Brain;" "A Report of Forty-one Hysterectomies Performed During the Period of Two Years, Nov. 1, 1895, to Nov. 1, 1897, on Patients Admitted to Dr. McCosh's Service at the Presbyterian Hospital;" "Intermuscular Operations for Appendicitis with Application of the Method to Cases in which Pus was Suspected and Found;" "The Tuberculin Test for the Presence of Tuberculosis;" "The Diphtheritic Colitis of Corrosive Sublimate Poisoning;" "A Case Showing Extreme Leukemia of Lymphoid Infiltration of the Viscera;" "A Report of Two Cases of Intestinal Resection;" "A Report of Twenty-seven Cases of Pneumonia Following the Inhalation of Ether and Chloroform;" "A Contribution of the Study of Malignant Endocarditis Caused by the Micrococcus Lanceolatus;" "A Combination Stain for Ganglion Cells;" "Congenital Tumor of the Hard Palate;" "Two Cases of Amputation Through the Hip Joint;" "The Surgical Treatment of Epilepsy, with a Report of Fourteen Cases;" "A Rare Case of Septicema—Diffuse Suppuration of the Chest Wall;" "Some Cases of Pancreatic Hemorrhage, Pancreatitis with Fat Necrosis, and Retroperitoneal Suppuration of Unknown Origin."

**Transactions of the American Pediatric Society.** Edited by Floyd M. Crandall, M.D. Volume ix. Cloth. Pp. 218. Illustrated. Reprinted from the *Archives of Pediatrics*.

This volume covers the ninth session of the Society held in Washington, D. C., May 4, 5 and 6, 1897. It contains a list of presidents and officers for the years 1896, '97 and '98, members for 1897-98, meeting places, and minutes of the ninth annual meeting, besides the following papers, many of which are printed with discussion, illustrations and charts. The volume is on excellent paper, well printed and a decided credit to the Society: The President's Address, "The Evolution of Pediatric Literature in the United States;" "The American Pediatric Society's Report on the Collective Investigation of the Antitoxin Treatment of Laryngeal Diphtheria in Private Practice;" "Acetanilid Poisoning in a Newly Born Infant. Absorption From the Umbilicus;" "The Rapid Bacteriologic Diagnosis of Diphtheria;" "Bottle of Improved Form for Pasteurizing Milk and for Nursing;" "The Use of Thyroids in Disease other than Cretinism;" "Retained Intubation Tubes;" "Two Cases of Meningitis, Apparently Tuberculosis with Recovery;" "A Frequent Significance of Epistaxis in Childhood;" "Synopsis of Fifty-six Cases of Empyema Operated upon during 1896, in the service of Mount Sinai Hospital, New York, with Remarks;" "Prenatal Infection in Diseases of Infancy;" "A case of Congenital Diaphragmatic Hernia, Associated with Recurrent Attacks Simulating Asthma Dyspepticum;" "Symptomatology of Lithemia;" "Case of Varicella Gangrenosa;" "Diphtheria of the Eye;" "A Brief Analysis of One Hundred Cases of Frank Pneumonia;" "Sarcoma of the Cutis of the Newly Born;" "Two Cases of Unilateral Tremor Occurring in Children;" "A Case of Tic Convulsif (Maladie des Tics);" "A Case of Goiter Cured by the use of Thyroid Extract;" "A Case of Exophthalmic Goiter Apparently Cured by the use of Thyroid Extract;" "Heredity and Degeneration;" "Retro Esophageal Abscess;" "Congenital Stenosis of the Larynx;" "A Report of Five Cases of Abscess of the Brain in Infants, together with a Summary of Twenty-seven Collected Cases in Infants and very Young Children."

**Transactions of the Southern Surgical and Gynecological Association,** Vol. x. Tenth session held at St. Louis, Mo., Nov. 9, 10 and 11, 1897. Published by the Association, 1898.

This volume contains a list of the members with their respective positions, the constitution and by-laws, the minutes of the proceedings and the papers and discussions. These have been abstracted in the JOURNAL and are well worthy a place in any physician's library. The editor has done his work well and the volume is handsomely printed.

**Verhandlungen der Berliner medicinischen Gesellschaft** aus dem Gesellschaftsjahre, 1897, Band xxviii. Paper, pp. 600. Illustrated. Berlin: L. Schumacher, 1898.

Part 1 contains the rules, by-laws, list of members of the society, with other data usually found in a society's transactions, and the proceedings of each session of the society from Dec. 16, 1896, to and including Dec. 8, 1897, taken up in regular order, reprinted from the *Berliner klinischen Wochenschrift*. Part 2 comprises a large number of valuable papers presented before the society. Among the contributors we notice, the names of Ewald, Harn, Baginsky, Klemperer, Bruck, Behrend, Lassar and Ewer.

## SOCIETY NEWS.

**A National Society to Study Epilepsy.**—At a meeting held at the Academy of Medicine in New York City on May 24, representatives from eight States were present to organize a "National Society for the Study of Epilepsy and the Care and Treatment of Epileptics." Speeches favoring the formation of such a society were made by Drs. Abram Jacobi, Ira Van Gieson, C. A. Herter, Frederick Peterson, E. C. Fisher and William P. Spratling of New York; H. C. Rutter of Ohio; William M. Bullard of Massachusetts, and B. D. Evans of New Jersey; and the following officers were elected: President, Hon. William Pryor Letchworth, LL.D., New York; first vice-president, Frederick Peterson, New York; second vice-president, Prof. William Osler, Maryland; secretary, William P. Spratling, New York; treasurer, H. C. Rutter, Ohio. The society organized with forty-four members. Application for membership should be addressed to the Secretary at Craig Colony, Sonyea, N. Y.

**Connecticut State Medical Society.**—The tenth annual meeting of this Society was held at New Haven, Conn., May 25 and 26. The following officers were chosen for the ensuing year:

President, H. P. Stearns of Hartford; vice-president, C. S. Rodman of Waterbury; secretary, N. E. Wordin of Bridgeport; treasurer, W. W. Knight of Hartford; committee on matters of professional interest, Ralph A. McDonald of New Haven, T. T. Simpson and S. P. Overlook of Putnam; committee to nominate physicians for the Retreat for the Insane, H. S. Fuller of Hartford, E. P. Swazey of New Britain and E. K. Leonard of Rockville; publication, John Pierce and Gustavus Eliot of New Haven; honorary members and degrees, J. C. Kendall of Norfolk, H. L. Hammond of Killingly and Carl E. Munger of Waterbury; arrangements, E. P. Swazey of New Britain, C. C. Beach of Hartford, H. G. Howe of Hartford, S. B. St. John of Hartford and G. K. Welch of Hartford; annual chairman, S. B. St. John of Hartford; medical examiner, Max Mailhouse of New Haven; dissertator

C. C. Beach of Hartford; alternate, F. W. Wright of New Haven. A resolution was passed, to be sent to Congress, asking that vivisection be permitted as far as absolutely necessary. The next meeting will be at Hartford. A resolution was also passed asking that examinations for admission to practice in the State be held at stated times.

**Missouri State Medical Association.**—The association held its forty-first annual meeting in Kansas City, Mo., May 24, 25 and 26. Many matters pertaining to the public health were taken up and thoroughly discussed. A resolution was adopted providing for the appointment of a committee to draft a bill to be presented at the next session of the legislature creating a State board of health, and the enactment of strict sanitary laws, with provisions protecting the association from quack practitioners. Joplin was selected as the next place of meeting and the following officers chosen: S. R. Highsmith, Carrollton, Mo., president; W. A. McCandless, St. Louis, W. S. Wainwright, Kansas City, W. S. Allen, Olean, J. D. Brummell, Salisbury, W. E. Lucas, Minden, vice-presidents; A. F. Dressel, Sedalia, secretary; B. C. Hyde, Kansas City, assistant secretary; E. Van Note, Hamilton, corresponding secretary; Ed. S. Wright, Fayette, treasurer.

**Iowa State Medical Society.**—The forty-seventh annual meeting of this Society was held at Des Moines, Iowa, May 18, 19 and 20. Dr. H. L. Getz reported that of the $2000 pledged toward the Benjamin Rush monument fund, $179 had been raised, $50 of which was contributed by the Polk County Medical Society. The Committee on Legislation made the report on osteopathy as follows:

During the past session of our legislature several bills were introduced that were against public policy and hostile to the interests of our profession, but only one of them passed.

As you all know, the senate bill, popularly known as the osteopathic bill, was carried by a majority of one in each branch of the legislature.

Your committee, together with a large number of the prominent members of this society, did not care to oppose the bill as a bill, but asked that those wishing to practice this fad in the State be required to pass an examination before the State Board of examiners on the subjects they profess to have studied, the same as any other practitioner; but a majority of our legislature in their wisdom and by the aid of a very heavy and constant lobby, saw fit to open the way for the practice of all forms of ignorance and superstitions to gain admission to our State under the cloak of this bill.

The operation of this law will do much less harm to the profession than it will to the over credulous public who is always waiting to be taken in by some new game. Yet it is very humiliating to think that our splendid medical law should be practically amended. The only consideration is that it will soon die out as do all such fads—let it alone.

Cedar Rapids was chosen as the place of meeting for 1899.

## MISCELLANY.

**Long Intubation in Infant.**—A seven months-old infant, apparently dead from suffocation in croup, was revived by intubation and artificial respiration, although requiring nine insertions of the tube in twenty two days, the tube being in the throat a total of 390 hours.—French Congress of Otology and Laryngology.

**The Numerical Increase of Crematories.**—According to the *British Medical Journal* as regards the number of crematoria, Italy comes first with twenty-four, America next with twenty-two, Germany is third with four; then come England with three, France with two, Sweden with two, Denmark with one and Switzerland with one.

**The Patient and the Bicycle**—Last week a curious Nemesis restored a bicycle to its owner, a medical man, at Portsmouth. The doctor while making a call left his machine resting against the curb outside. On his coming out the bicycle had disappeared, but an hour or two later a man was brought to his surgery suffering severely from a fall off a bicycle, which turned out to be that of the doctor.—*Medical Press and Circular.*

**Radiography for Foreign Body in the Nose.**—A patient complaining of purulent rhinitis was examined and a canula found in the left canal, which had been inserted and forgotten forty-two years before. The rhinitis continued and a radiograph showed that the upper end of the canula was still in the nose. It was extracted through the inferior meatus, when all disturbance ceased at once.—French Congress of Otology and Laryngology.

**To Educate the Gullible Public.**—An Irish newspaper contains a communication from Lord Maurice Fitzgerald of Johnstown Castle, County Wexford, warning the people and peasantry to avoid the "cancer curers" so numerous in Wexford. "If persons of influence throughout the kingdom would follow Lord Maurice Fitzgerald's example, and thus warn their less instructed neighbors of the perils of quackery, they would be conferring a great boon on the community."

**A Missionary Hospital in Korea.**—The medical missionary, J. Hunter Wells, M.D., writes from Pyeng Yang, in Korea, that a small hospital over which he presides, and accommodating between thirty and fifty in-patients, costs only $1200. The floors in the wards are of stone, covered with clay and paper and heated underneath. The patient's board costs 12 cents per diem. The first assistant gets $3.50 a month, the second $3 and the errand boy $1.80. Drugs are obtained from Japan for less than half what they cost here, and the entire expense for everything but the missionary's salary, which comes from America, was $1000 for eighteen months. Hospital care averaged ten cents a patient.

**Parturition During Paraplegia.**—Routh (*Edinburgh Medical Journal*, February, 1898) relates the case of a multipara who, when about seven months pregnant, met with an accident which produced immediate and complete paraplegia. Labor began on the two hundred and sixty-first day. During the pains a feeling of "tightness" only was experienced, and when the head was passing over the perineum the cries of the patient were explained as being due not to suffering. The author offers the following conclusions that: 1. In pregnant women with paraplegia, labor may be apparently normal both as regards the period of its onset and its mode of completion, but without the sensation of pain. 2. Involution and lactation are normal. 3. Conception may take place during paraplegia.

**La Grippe in Pregnancy** is a serious complication and still more serious if it continues or first appears during childbed. Bar observed an epidemic of fifty cases in his maternity service, with four deaths, last winter. Severe broncho-pneumonia appeared in five of the ten post deliverance cases. The other manifestations were varied, mostly affecting the respiratory organs, although endocarditis and purulent infection were frequent.—*French Obstet. Congress.*

**Operative Treatment in Fractures and Dislocations.**—Nichols (*Phila. Med. Jour.*, May 28) advocates operative treatment in certain fractures and dislocations, and reports cases. In none of his cases "has the operation added anything, apparently, to the shock, but in some instances relieved it." He believes there is little danger of septic infection with a competent operator. He favors operative treatment especially in oblique fractures of the clavicle, and cites three cases, so treated, where the only deformity discernible is a small linear scar.

**Concerning Rabies.**—Ruhräh (*Phila. Med. Jour.*, May 28) reports on "A Year's Work in the Preventive Treatment of Rabies," the results of an investigation through the Pasteur Department of the College of Physicians and Surgeons, Baltimore, Md. Thirty-five cases were treated and he shows, contrary to the general opinion, that there is "very great prevalence of the disease in this and adjoining States." Seventeen of

forty-two dogs examined proved to be rabid. None of the thirty-five cases treated have so far shown any signs of the dis case. Of these, twenty-five were bitten by animals which were, in the laboratory, proved to be rabid. In the other ten cases rabies was suspected, but the dogs could not be obtained for experimental purposes.

**Dosage of Antitoxin.**—An increased amount of antitoxin is required to neutralize a toxin, if the coagulating property of the blood is reduced. Experiments at Marburg have demonstrated the fact that if the blood of guinea pigs, rabbits, pigeons, hens, be deprived of its coagulability with sodium citrate, twenty-five to fifty times as much antitoxin is required to neutralize the fatal dose of tetanus toxin, and one hundred times for diphtheria toxin. This fact is not identical with Ehrlich's discovery that a toxin molecule may retain its antitoxin binding property, while losing its toxicity, in which case it becomes a toxoid, as he has observed after weakening the strength of tetanus toxin with iodin trichlorid. The question now is, what element in the blood thus checks the toxin-neutralizing power of the antitoxin, and also whether the toxin or the antitoxin is affected, or both, and the import of the discovery from a therapeutic point of view.—*Deutsche Med. Woch.*, May 12.

**Immunization.**—The Ehrlich theory of immunity which has led to important results in the past three months is thus concisely stated by Behring: 1. A toxin only produces its specific disease in those individuals who already possess a substance in the living cells or tissues which has a chemical affinity for the toxin. 2. When this substance passes out of the tissues into the blood, it becomes a protecting and curing substance. In other words, the same substance which stored in the cells, is the preliminary and indispensable condition to an intoxication, transferred into the circulation, cures it, recalling Hippocrates' "what causes the disease, cures it," but unlike this, susceptible of scientific demonstration, as many have already reported, *vide* JOURNAL, pages 1200, 1127, 449. Wernicke has saved guinea pigs inoculated with a fatal dose of anthrax, by administering spleen substance, after killing the anthrax bacilli in it, thus causing the production of sufficient anti-bodies to subdue the infection. Pfeiffer has also recently announced that the cholera protecting bodies are accumulated in the blood-producing organs much more abundantly than in the blood itself. The application of this theory in therapeutics is more or less dangerous, as a certain degree of intoxication must be attained in order to start the production and dissemination of the anti bodies, especially in cases in which there is already an advanced condition of irritability, evidenced by fever. Koch now refuses tuberculin treatment altogether to patients with fever. But these patients are the very ones who will benefit most when we finally succeed in supplying directly to the blood such a powerful toxin-binding substance that the effect will be accomplished without compelling the organism to extra work.—*Deutsche Med. Woch.*

**Relief Associations.**—The patriotic women of the United States being debarred the privilege of fighting for their country, are organizing for relief purposes in many cities and States. The last circular that we have seen relating to relief committees, was issued by the ladies of Providence, R. I. It sets forth that the reader is cordially invited to become a charter member or member of the Rhode Island Sanitary and Relief Association which is being formed for the purposes of sending comforts to our sick and wounded soldiers and sailors (under the directions of the surgeon generals of our army and navy), and also as far as possible to assist deserving families of enlisted men, residents of Rhode Island. The headquarters of the Association is in Room 221, Banigan Building, Providence, but branches will be formed in every city and town in the State. Charter members (women only) pay $10 initiation fee and $1 annual dues. Members (men and women) pay $1 initiation and $1 annual dues. "It is not too early to organize relief committees, for already one great battle has been fought, and we know not how soon the horrors of war may be at our very doors. Will not every patriotic man and woman in our State come forward and share in this work?" On the advisory board are His Excellency Governor Elisha Dyer and two original members of the Sanitary Commission of 1861, Rt. Rev. Thomas M. Clark and Professor Walcott Gibbs. Among the names of the promoters of the movement are those of Mrs. A. Livingston Mason, president of the Society of Colonial Dames in the State of Rhode Island; Miss Sarah E. Doyle, president of the Society for the Collegiate Education of Women; Mrs. Anna Garlin Spencer, president of Local Council of the Women of Rhode Island, affiliated with the National Council; Mrs. Henry L. Ballou, State Regent, Daughters of the American Revolution; Miss Ellen G. Hunt, president Rhode Island Women's Club, and many others.

**A Visit to Dr. Schenk of Vienna—the "Sex Regulator."**—Dr. Neesen of Brooklyn, who has been taking a post-graduate course at Vienna, writes of a visit to Professor S. L. Schenk: "When I called at Dr. Schenk's house I found the street blocked with carriages of all descriptions. A group of well-dressed people stood on the stoop of the house, waiting to be admitted. The anterooms were crowded to suffocation with visitors, most of them women, richly attired and genteel looking, all waiting to consult the professor.

"Dr. Schenk told me: 'I have been making experiments for the last twenty years, but the profession must decide whether or not I have discovered anything new. The wife of a Parisian journalist was sent to me by her physician. She was despondent because of her lonely home. I assured her that I could help her, and then with my experiments in mind, I asked her if she desired a boy or girl. She replied that both she and her husband wanted a boy. The woman underwent treatment, and in due course of time she had born to her a bouncing boy of twelve pounds weight. The husband was so overjoyed that he told the experience to his friends, and so it got into the newspapers. I am persuaded that the quality and quantity of the food digested has largely to do with the production of male or female offspring. Drugs are used to some extent, but they have no specific action on the determination of the sex. I use them simply as a means of raising or lowering the state of the general health.

"'I began twenty years ago treating animals, and I met with such success that I began experiments with human beings. Many persons have been misled by the incorrect reports that have got abroad about this treatment. The rooms out there are full of such. They come here wholly misinformed and expect me to do the impossible. They are pestering me constantly. I have, so far, endeavored to see every one and treat them courteously, but the task is getting too arduous.'

"Dr. Schenk has been unable to attend to his regular practice since his discovery began to be talked about. All of his household arrangements have been interfered with. He has had to slip out at the side entrance to avoid the crowd in front of his house. He has given out, again and again, the statement that he will not accept any fee for practicing his system, nor treat any patients except those whom he selects for experimental purposes and whom he places in his sanitarium."

His pamphlet propounding his theories has just appeared, and is the sensation of the day abroad. He believes that the most vigorous parent determines the development of the ovum, whether it is to remain a female, an inferior being, or develop further into a male. This influence of the parent on the sex is always a *crossed* influence; the male parent engenders a female, and the female, a male. All that is necessary, therefore, is to build up the would-be mother to such a condition of health and vigor that her influence preponderates, and behold,

a son! If examination of the urine shows more or less glycosuria, then the woman is not in perfectly normal conditions and her diet must be regulated until all traces of sugar disappear, commencing several months before conception and continuing for three to four months afterward. Already the drug stores are placarded: "Analysis for sugar while you wait," and the medical press is observing that fortunately for the theory there are only two sexes.

**The Hospital Corps of the Volunteer Army.**—An obstacle in the way of obtaining men for hospital and ambulance duty with the Volunteer Army has been removed. The act authorizing the levy of troops made no provision for members of a hospital corps. Privates of the Hospital Corps of National Guard regiments could not be mustered as such into the service of the United States. They were accepted as privates of the line with the expectation that when a hospital corps was formed they would be transferred to it. No volunteer hospital corps has been formed, but authority has been granted for the transfer of men from the line of the volunteer organizations to the Hospital Corps of the Regular Army. Moreover, the regulations governing the assignments of active hospital stewards and the appointment of hospital stewards of the Regular Army were found to be inapplicable to the conditions existing in a hastily formed military force. Under these regulations a year's service as a private in the corps was a preliminary requirement to promotion to the position of acting hospital steward. The following orders, No. 58, Headquarters of the Army, Adjutant General's Office, May 31, 1898, modify these regulations and permit of the organization of a hospital corps suitable to the needs of the seven Army Corps now being formed:

Enlisted men of the volunteer organizations may be transferred to the Hospital Corps of the Regular Army by the Commanding General of the Army Corps in which the soldier is serving, upon the recommendation of the Chief Surgeon of the Corps.

The provisions of Army Regulations governing the Hospital Corps so far as they are inapplicable in the time of war and with troops in the field are hereby suspended during the existence of such conditions.

The Commander of an Army Corps, or of a Division or Brigade acting independently of a Corps, is charged with the full control of the transfer from the line, the enlistment, re-enlistment and discharge of members of the Hospital Corps of his command, with the detail of acting hospital stewards and the appointment of hospital stewards.

Acting hospital stewards will be detailed from privates of the Hospital Corps who are recommended by their medical officers as possessing the necessary qualifications. Hospital stewards will be appointed from acting hospital stewards who are recommended by their medical officers and who have served not less than three months in the Hospital Corps and are approved by a board of not less than three medical officers.

Enlistment papers in duplicate, examination forms and outline figure cards for members of the Hospital Corps will be forwarded to the Surgeon General's Office, as now required, and monthly reports will be made by the chief surgeon of the Corps, or Division if acting independently, showing the number of stewards, acting stewards and privates on duty, the names of men transferred from the line, of those enlisted or re enlisted, discharged, died, detailed acting hospital steward, or appointed hospital steward.

The quota of members of the Hospital Corps for a corps of 25,000 men, is:

| | Hospital stewards. | Acting hospital stewards. | Privates. |
|---|---|---|---|
| For each regiment of infantry | 1 | ... | 1 |
| For each artillery battalion, 3 light batteries | ... | 3 | 1 |
| For each regiment of cavalry | 1 | ... | 2 |
| For each corps headquarters | 1 | ... | 2 |
| For each division headquarters | 1 | ... | 1 |
| For each brigade headquarters | ... | ... | 1 |
| For each division ambulance company and for the reserve corps company | 7 | 3 | 104 |
| For each division field hospital and for the reserve corps field hospital | 6 | 3 | 90 |

The three volunteer hospital stewards mustered in with each regiment are included in this strength.

The Corps Commander may make such distribution of the members of the Hospital Corps within his command as he considers for the best interests of the service.

**Pure Water for the Troops.**—The following is the text of Surgeon General Sternberg's Circular, dated May 31, referred to in our editorial on another page:

The Quartermaster General has been authorized to provide filters for the use of the Army. The filters recommended by the Surgeon General are the Berkefeld cylinder and the Maignen asbestos filter. These filters are intended to supplement each other, and the use of both is required to obtain a plentiful supply of water free from the germs of disease. Medical and company officers should have a thorough understanding of the intention and action of each of these filters that the full benefit of their use may be ensured to the troops. The Berkefeld filter is a specially prepared earthernware cylinder through the pores of which the water has to be forced by the exercise of considerable piston pressure. The pores are so small that they exclude or filter out, not only all particles which would give a turbidity or cloudiness to the water, but those more minute particles which are the active agents in the production of typhoid fever and other camp diseases. The filter is, therefore, an efficient filter, but the smallness of the pores which gives it its efficiency constitutes an objection to its use in practice. Its pores speedily become choked by a coating of filtered particles. If greater pressure be used to increase the rapidity of filtration, the connections of the cylinder may become strained and the filter be rendered valueless, while if the cylinder be removed and its surface scrubbed it is exposed to the risk of fracture unless handled with the utmost care. The Maignen asbestos filter has larger pores than the other. Water passes through it more readily and under slight pressure. The coarser particles which give a cloudiness or turbidity to a water are strained out; but as the germs of disease are not excluded the filtration from the sanitary point of view is not efficient. It will be seen, however, that the Maignen filter may be put advantageously to use in preparing water for purification by the Berkefeld cylinder. By straining out the particles which otherwise would choke the Berkefeld filter, it enables the latter to operate as rapidly as itself and does away with the necessity for increased pressure or frequent interruptions for scrubbing the porous cylinder. To use the two filters in combination, the bucket or other receptacle containing the unfiltered water and the asbestos filter should be fixed securely at a height of five or six feet from the ground. From this bucket the clear, but not necessarily pure, water is delivered by the rubber tube of the filter into another bucket properly placed to receive it and to admit of the pumping of the filtered water through the Berkefeld cylinder into vessels for storage or use. It has been found that asbestos filtered water can be rendered sterile by the Berkefeld apparatus at the rate of about five gallons in twelve minutes, the pump working easily. The outer covering of the Maignen filter should be kept free from deposits of clay or other matters by brushing or scrubbing. If need be the outer casing of asbestos cloth may be removed, washed and replaced. The filter, as a whole, may be sterilized, when necessary, by boiling in water. When not in use it should be exposed to the air as much as possible. The Berkefeld filter is worked by placing the pump in the vessel containing the asbestos filtered water, with its nozzle resting firmly on the bottom. The piston is then worked without jerking while counter pressure is made with the left hand on the top of the barrel. To keep the cylinder in perfect condition, when thus used, it should be sterilized every fourth day. The thumb screws on top should be unloosed and the cylinder having been lifted carefully from its metal case, should be put in water of ordinary temperature which should be brought to the boiling point and kept at this temperature for five minutes. When removed from the hot water it should be allowed to cool before being replaced for use. The cylinder is liable to become cracked and useless by sudden changes of temperature. If a cracked or worn out cylinder has to be replaced the small wheel should be unscrewed from the lower end of the old cylinder and screwed upon the new one. The nut at the bottom of a cylinder should never be unscrewed.

**Appointments and Assignments of Army Medical Officers.**—Chief Surgeons of Divisions were recently assigned by the Secretary of War as follows:

Majors Clayton Parkhill, James H. Hyssell and Jefferson D. Griffith, Surgeons, U. S. Volunteers to the divisions of the 1st Army Corps, Major General John R. Brooke, U. S. Army, Commanding, at Chickamauga National Park, Ga. Majors

George Cook, Leonard B. Almy and Charles B. Nancrede, Surgeons, U. S. Volunteers to the divisions of the 2d Army Corps, Major General William M. Graham, U. S. Volunteers, Commanding, at Falls Church, Virginia. Majors Louis Schooler, James M. Jenne and Henry F. Hoyt, Surgeons, U. S. Volunteers to the divisions of the 3d Army Corps, Major General James F. Wade, U. S. Volunteers, Commanding, at Chickamauga National Park, Ga. Majors John M. G. Woodbury, R. Emmitt Griffin and Thomas C. Kimball, Surgeons, U. S. Volunteers to the divisions of the 6th Army Corps, Major General James H. Wilson, U. S. Volunteers, Commanding, at Camp George H. Thomas, Chickamauga National Park, Ga. Majors Thomas E. Evans and Eduard Boeckmann, Surgeons, U. S. Volunteers, to divisions of the 7th Army Corps, Major General Fitzhugh Lee, U. S. Volunteers, Commanding, at Tampa, Florida. Other assignments have been made as follows: To the expeditionary force for the Philippine Islands, Captains Frank R. Keefer and Paul F. Straub, U. S. Army; Acting Assistant Surgeon George H. Penrose to the Utah Batteries forming part of the command; Major Herbert W. Cardwell to duty as Chief Surgeon of a division in the Department of the Pacific; arrangements have been made for the relief of Captain Guy L. Edie, U. S. Army from St. Michaels, Alaska. To the General Hospital at Key West, Florida, Acting Assistant Surgeon A. H. Mann, U. S. Army. To the General Hospital at Fort McPherson, Georgia, Acting Assistant Surgeon James H. McCall, U. S. Army. To Fort Monroe, Virginia, Acting Assistant Surgeon W. P. Chamberlain. To Tampa, Acting Assistant Surgeons R. M. Geddings and Thomas R. Marshall, U. S. Army. To the Hospital Ship *Relief*, Acting Assistant Surgeon Wm. M. Gray, U. S. Army, from duty at the Army Medical Museum, Washington, D. C. Many appointments as Chief Surgeons of Brigades, and divisions with the rank of Major in the Volunteer Army have been sent to the Senate for confirmation. The senior captains and assistant surgeons of the Regular Medical Department have the lead in these appointments. The following is the list of nominees:

To be Chief Surgeons of Division, with rank of major—Capt. Wm. H. Arthur, assistant surgeon U. S. army; Capt. George E. Bushnell, assistant surgeon U. S. army; Donald MacLean of Michigan; George R. Fowler of New York.

Captains and assistant surgeons U. S. army, to be Brigade Surgeons, with rank of major—Wm. C. Gorgas, Henry P. Birmingham, Marlborough C. Wyeth, Richard W. Johnson, Edward C. Carter, Wm. O. Owen, Peter R. Egan, Wm. J. Wakeman, Wm. Stephenson, Adrian S. Polhemus, John L. Phillips, Wm. C. Borden, Edgar A. Mearns, Guy L. Edie, Wm. D. Crosby, Wm. L. Kneedler, Charles M. Gandy, James E. Pilcher, Charles B. Ewing, Walter D. McCaw, Jefferson R. Kean, Henry I. Raymond, Francis J. Ives, Wm. P. Kendall, Edward R. Morris, Henry S. T. Harris, Wm. B. Banister, Paul Clendenin, Charles E. Woodruff, Capt. Eugene L. Swift, Paul Shillock, Ogden Rafferty, Chas. F. Mason, James D. Glennan, Alfred E. Bradley, Philip G. Wales.

To be Brigade Surgeons, with rank of major—Willis MacDonald, Charles M. Drake of Georgia, Joseph K. Weaver, John Guiteras of Pennsylvania, Charles E. Ruth of Iowa, John W. Bayne of the District of Columbia, Milo B. Ward of Missouri, Schuyler C. Graves of Michigan, George T. Vaughan of marine hospital service, Nathan S. Jarvis of New York, Wm. Devine of Massachusetts, John C. Martin of Ohio, Peter D. Machaughaton of Michigan, Samuel T. Armstrong, acting assistant surgeon; John Patterson Dodge of Ohio, John R. McDill of Wisconsin, Samuel O. L. Potter of California, Geo. A. Smith of Iowa, Arther Snowden of Virginia, R. Stansbury Sutton of Pennsylvania, Frank Bruso of New York.

## Philadelphia.

HOMEOPATHS FOR THE ARMY AND NAVY OF THE UNITED STATES.—The homeopaths of Philadelphia have applied direct to President McKinley for recognition in the army and navy of the United States of America and the executive has promised them that no discrimination in this matter will be allowed. This may be a test then as to what homeopathy really means. If they give the same medicines and operate according to the teachers of surgery throughout the world then what is the difference between homeopathy and medicine? At any rate, the homeopaths of Philadelphia told Governor Hastings that they had been discriminated against. They stated that the Governor had explained that all the medical officers were appointed first by the colonels of regiments and that such applicants were subsequently confirmed by the adjutant generals. He further stated that if any case came before him in which any discrimination was shown he would call for an investigation. A case has been cited in which a homeopath by the name of Dr. William F. Satchell desired to enlist in the Pennsylvania Naval Reserves and was told that it was purely an "old school" organization. At the recruiting office they told him that those who practiced homeopathy might enter the hospital corps as privates but could not enlist as surgeons or assistant surgeons. The gentleman of that denomination also states that one of their number applied to Surgeon-General von Ripen who told him (Dr. Thomas H. Hollinshood) "that there was no chance whatever for him, but in truth he was in favor of having a few homeopaths in the service as it would be a great saving to the Government by doing away with a large drug bill since graduates of that school cured almost entirely by faith." These homeopaths took a final appeal and sent a delegation direct to the President. They were introduced by a senator from Pennsylvania (Penrose) and General Bingham. President McKinley, it is stated, received them cordially. After they had stated their case he told them that he had reviewed the subject and could find no law to prevent them from becoming surgeons and assistant surgeons in the army and navy provided they passed the examinations. It is supposed that this Committee left happy and it is said they will notify aspirants to make applications and pass the examinations.

PHILADELPHIA FOR CLEAR WATER.—The people of this city are still drinking water so contaminated with mud and coal dust that it is becoming almost unbearable. A great many remedies have been suggested, but the fact remains that the water is not clear. Recently a committee was appointed to make an investigation along the banks of the Schuylkill and try to find out the origin of the evil. The health officer Dr. Benjamin Lee now thinks the city will have to give up the Schuylkill water entirely and tap the Delaware River a number of miles above the large cities. This question is by no means settled, and out of the thousand and one remedies offered by councilmen and all, not one has been accepted to bring about the proper solution of a subject of most moment to any city or village of this country.

STATUE FOR DR. NATHANIEL CHAPMAN.—By the will of Dr. Samuel Jackson, formerly Emeritus Professor of the Institute of Medicine of the University of Pennsylvania (1835-1863), the sum of $3,000 has been left for the erection of a statue to the memory of Dr. Nathaniel Chapman, Professor of Materia Medica at the University of Pennsylvania (1813-1816) and afterward Professor of Practice of Medicine (1816-1850). It was the expressed desire of the benefactor to have the monument erected on Ninth Street "between the two college buildings," but as that space is now occupied by the post office this request can not be carried out and a new site will consequently be chosen.

DR. GUY HINSDALE HONORED.—The Boylston prize offered by Harvard University has been awarded to Dr. Guy Hinsdale for his monograph on "Acromegaly."

GOOD-BYE TO BAD WATER.—The sanitary commission recently appointed by the Board of Health of Philadelphia recently made a tour of inspection of the Schuylkill river to find out the source of pollution. They found it in several places without much trouble. Sewage, coal dust and other varieties of filth pour into this stream constantly. After a great deal of hard work by the organized medical societies and health commission, $3,700,000 will be spent in establishing a proper filtration plant provided the select council will concur. Drs. William Pepper and John K. Mitchell have been two of the most unceasing workers among physicians for better water.

NEW PROFESSOR OF OBSTETRICS.—At a recent meeting of the officers of the Medico Chirurgical College, Dr. George M. Boyd was elected clinical professor of obstetrics. Dr. Boyd is a graduate of the University of Pennsylvania and an ex-resident of the Episcopal Hospital, this city. He is a member of the County and State Medical Societies, the College of Physicians and of the AMERICAN MEDICAL ASSOCIATION.

HEALTH PROTECTIVE ASSOCIATION.—Dr. E. D. M. Sajous of Philadelphia will endeavor to organize a commission, composed of physicians, to devise health rules to be observed in the tropic countries during the war.

SUPPOSED PTOMAIN POISONING.—Three men of Philadelphia recently prepared a dinner, the principal article of which was pork. A short time after the meal all three became quite ill with symptoms of trichinosis, but subsequent examination proved absence of trichinæ and it is now supposed the meat when bought was in a state of decomposition, giving rise to the symptoms produced.

MORTALITY STATISTICS.—At noon, May 28, there had been for the week past a total of 409 deaths, an increase of 26 over the preceding week. Of these, diphtheria caused 10 deaths,

typhoid fever 8, scarlet fever 4, as against 20, 7 and 3 deaths for the week preceding. Of the total number of deaths, 121 were children under five years of age.

**Impassible Constriction of Esophagus.**—Rosenheim recently performed gastrostomy on a child for this cause, and all food was taken through the gastric fistula, until the restriction was reduced by laminaria and an inflated rubber ball. Ewald has frequently observed these constrictions subside spontaneously after gastrostomy.

## ASSOCIATION NEWS.

### The Denver Meeting.

LINCOLN, NEB., June 5, 1898.

The special train of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION left Chicago at the tick of the clock 11 P.M. Saturday. All the reservations were taken with the exception of those reserved for members in Iowa and Nebraska, who intended to join en route. The equipment of the train was superb, with every convenience and accommodation for the passengers. The party up to this point are very happy and seem to be enjoying themselves immensely. The train consists of nine Pullman sleeping cars, two dining cars and a baggage car. It required two engines to haul the train from Burlington. The following comprised the party as it arrived at Burlington:

A. P. Clarke & daughter, Cambridge, Mass.
Wm. E. Upjohn & wife, Kalamazoo, Mich.
E. F. Ingals, Chicago.
A. Hakanson & wife, Chicago.
Frank C. Greene, Chicago.
H. N. Greene & wife, Chicago.
Miss Moore, Chicago.
Chas. Truax, Chicago.
M. L. Harris, Chicago.
F. C. Hotz & wife, Chicago.
N. J. Smedley, Chicago.
Geo. C. Prussing, Chicago.
Jos. Eastman & daughter, Indianapolis.
J. A. Horn & wife, Mauch Chunk, Pa.
N. E. Woessner, Huron, Ohio.
L. C. Taylor, Springfield, Ill.
W. D. Storer, Chicago.
Frank Burridge, Chicago.
Frank T. Stevens, Mt. Pleasant, Ia.
J. M. Postle & wife, Hinckley, Ill.
L. E. Munson, Mt. Pulaski, Ill.
Miss Katie Mason, Brighton, Ia.
M. C. Terry & wife, Brighton, Ia.
C. B. Stockwell, Port Huron, Mich.
E. E. Tansey & wife, Chicago.
A. C. Taylor, Baldwinsville, N.Y.
J. S. Marshall, wife & son, Chicago.
E. H. Root, Chicago.
T. S. Conley, Chicago.
M. S. Rosmer, Ashland, Wis.
Jas. P. Stimpson, Pittston, Pa.
H. S. Mead, Lima, Ohio.
D. W. Sterne, Lima, Ohio.
Frank M. Mason, Rossville, Ill.
Mrs. Kate M. Mason, Rossville, Ill.
Daniel R. Brower, Chicago.
H. S. Mead, Kalamazoo, Mich.
J. H. Stanley & wife, Freeport, Ill.
J. W. Long & wife, Bryon, Ohio.
Louis L. Gregory, Chicago.
Allen Salter, Lena, Ill.
A. C. Getchell, Worcester, Mass.
Alex. McAlister, Camden, N. J.
G. W. Johnson, Chicago.
A. B. Campbell & wife, Syracuse, N.Y.
A. H. Tagert & daughter, Chicago.
A. E. Miller, Boston, Mass.
C. W. Bussett & wife, Chicago.
H. A. Bremmer & wife, Merritt, Ill.
G. H. Elskamp, Washington, Iowa.
H. A. Spangler & wife, Carlisle, Pa.
J. H. Jackson, Bucyrus, Ohio.
F. E. Bell & daughter, Chicago.
Hugh McCall, Lapear, Mich.
Hon. Alonzo Garcelon, Lewiston, Me.
Miss Garcelon & friend, Lewiston, Me.
F. W. Werner & wife, Joliet, Ill.
Owen O'Neal, Chicago.
B. D. La Force, Ottumwa, Iowa.
Warren B. Hill, Milwaukee, Wis.
H. M. Brown, Milwaukee, Wis.
Letitia A. Westgate, Sycamore, Ill.
W. H. Earles, Chicago.
G. V. I. Brown, Milwaukee, Wis.
J. M. Anders, Philadelphia, Pa.
L. Tibbets & wife, Rockford, Ill.
J. T. Priestley, Des Moines, Iowa.
C. M. Hobby, Iowa City, Iowa.
Ernest Laplace, Philadelphia.
Marie J. Mergler, Chicago.
F. J. Whitney, Leominster, Mass.
James H. Hagenbuch, Mahanoy City, Pa.
Chas. Davidson, Chicago.
J. V. Shoemaker, Philadelphia, Pa.
C. T. Hoffman, Morea Colliery, Pa.
T. F. Stanton, Charlton, Iowa.
John L. Crofts, Little Falls, N. Y.
C. W. Prevost, West Pittston, Pa.
John Z. Shedd, N. Conway, N. H.
Carl Stutzman, Burlington, Iowa.
Louis Plessner, Bay City, Mich.
A. E. Miller, Boston, Mass.
C. B. Powell, Albia, Iowa.
J. M. Roberts, Philadelphia, Pa.
E. L. Mitchell, wife & daughter, Roseville, Ill.
W. E. Shallenberger, Canton, Ill.
J. P. Sherer, Little Falls, N. Y.
W. C. Taylor, St. Louis, Mo.
S. J. Wimmer, New York City.
S. C. Gordon, Portland, Me.
M. Kemp, Calumet, Mich.
Geo. W. Orr, Lake Linden, Mich.
John B. Murphy & wife, Chicago.
H. B. Osborne & wife, Kalamazoo, Mich.
F. C. Robinson, Wyanet, Ill.
Anna M. Braumworth, Chicago.
A. A. Ashby & wife, Red Oak, Ia.
A. A. Rowson, Corning, Ia.
Henry B. Young, wife & daughter, Burlington, Iowa.
Stephen Hexter, Chicago.
A. I. Lawbaugh, Calumet, Mich.
E. G. Davidson, Chicago.
J. K. Lineaweaver, wife & daughter, Columbia, Pa.
W. Ruml & wife, Cedar Rapids, Ia.
Paul Plessner, Fremont, Ohio.
C. S. Parkhill, Hornellsville, N. Y.
D. S. Fleming, Jackson, Mich.
Chas. G. Cannaday, Roanoke, Va.
G. W. Hiett, Pittsburg, Pa.
Jos. E. Winters, New York City.
James Mills, Janesville, Wis.
Henry Gradle, Chicago.
F. W. Greene, Chicago.
U. O. B. Wingate, Milwaukee, Wis.
Mrs. F. Henrotin, Chicago.
F. G. Byles & wife, Fredonia, Pa.
G. T. Armstrong, Osceola, Iowa.
Chas. True & wife, Kankakee, Ill.
J. R. Weist & wife, Richmond, Ind.
W. M. Sheffer, Ohio.
J. P. Beckley, Lima, Ohio.
A. C. Cotton, Chicago.
A. L. Hupp, West Union, W.Va.
E. Schifferle & wife, Creston, Ia.
F. E. Sampson & wife, Creston, Ia.
W. C. Abaly, Madison, Wis.
F. M. Corwin & lady, Bayonne, N.J.
Effie L. Lobdell, Chicago, Ill.
Wm. Eastman, Mineral Point, Wis.
J. H. Martindale, Minneapolis.
R. O. Beard, Minneapolis, Minn.
C. A. Wheaton, St. Paul, Minn.
J. R. Fulton, St. Paul, Minn.
F. D. Haldeman, wife & daughter, Ord, Neb.
Jas. W. Cokenower & wife, Des Moines, Ia.
A. L. Belt, wife & children, Gilmore City, Ia.
M. M. Newbecker, Asylum, Neb.
David F. Monash, Des Moines, Ia.
E. J. Lewis, Sauk Center, Minn.
A. E. Benjamin, Minneapolis.
M. F. Paterson, Minneapolis.
John B. Hamilton & wife, Chicago.
Wm. Whitford, Chicago.
W. C. Braun, Chicago.
E. W. Lee, Omaha, Neb.
Jas. E. Moore, Minneapolis.
W. J. Musgrove, Grafton, N. Dak.

[SPECIAL STAFF CORRESPONDENCE.]

DENVER, June 8, 1898.

The Denver meeting will pass into medical history as one of the most pleasant, enjoyable and profitable meetings the ASSOCIATION has yet held. The arrangements were well carried out, and the various Sections carried out their programs on schedule time and were well attended. The registration reached twelve hundred on Tuesday, a remarkably large number when it is remembered that many of our members are now in the service of the United States Government.

The meeting was called to order by Dr. J. L. THOMPSON, Second Vice-president, in the absence of President STERNBERG, whose official duties compelled him to remain in Washington. After prayer by the Rev. W. F. MCDOWELL, the ASSOCIATION was welcomed by His Excellency, ALVA ADAMS, Governor of the State; by the Hon. W. S. MCMURRAY, mayor of the city, and by Dr. J. W. GRAHAM of Denver. The Governor's address was eloquent, witty and patriotic. The others were of high order and were received with great enthusiasm. After the reading of the President's Address a telegram of congratulation was sent to Surgeon-General STERNBERG.

The Nominating Committee selected the following officers for the ensuing year: President, JOSEPH M. MATHEWS of Louisville; First Vice-president, W. W. KEEN, Philadelphia; Second Vice-president, J. W. GRAHAM, Denver. Annual orations to be delivered by J. C. WILSON, Philadelphia, on Medicine; ALEXANDER MCRAE on Surgery, and D. R. BROWER on State Medicine. The city of Columbus was selected as the next place of meeting.

The Section Dinners held Tuesday evening were well attended. The Sections on Surgery and Gynecology held a joint dinner, where patriotism and the red, white and blue ruled the exercises. The toasts were: "Our Absent Members," W. W. KEEN, Philadelphia; "The United States Army, 1861 to 1865," P. S. CONNER, Cincinnati; "The Confederate Surgeon," JOSEPH PRICE, Philadelphia; "Our Modern Navy," SHERWOOD DUKE; "The Medical Corps, United States Army," CURTIS E. MUNN; "Our New Sanitary Problems," JOS. M. MATHEWS, Louisville. W. L. RODMAN of Louisville presided admirably, and the local committee of arrangements sang patriotic songs between the speeches. Deep feelings of patriotism and of sympathy with our army and navy pervaded the entire assembly, and the occasion was one long to be remembered by those in attendance and was calculated to bring out the best efforts of the speakers.

At the meeting of the American Academy of Medicine held Monday the following officers were elected for the ensuing

year: President, Dr. Edward Jackson, Denver; first vice-president, Dr. W. L. Estes, South Bethlehem, Pa.; second vice-president, Dr. J. T. Searcey, Tuscaloosa, Ala.; third vice-president, Dr. William Elmer, Trenton, N. J.; fourth vice-president, Dr. Robert H. Babcock, Chicago; secretary and treasurer, Dr. Charles McIntyre, Easton, Pa.; assistant secretary, Dr. W. L. Pyle, Philadelphia.

The American Medical Editors held an instructive meeting and Dr. T. H. Hawkins of Denver was elected president. The banquet was well attended. Dr. I. N. Love of St. Louis presided as toastmaster and speeches were made by various members of the editorial fraternity.

The Association of American Medical Colleges had a full attendance, several new colleges being admitted to membership. A committee was appointed to draft a new constitution. The following officers were elected for the ensuing year: President, H. O. Walker, Detroit; senior vice-president, Dr. H. Bert Ellis, Los Angeles; junior vice-president, Dr. G. E. Woody, Louisville, Ky.; secretary and treasurer, Bayard Holmes, Chicago.

### CHANGE OF ADDRESS.

Aldridge, H. W., from Galveston, to Hitchcock, Texas.
Abbott, J. B., from Richmond to West Appomattox, Va.
Baumgarth, N. R., from Milwaukee, Wis., to 425 South Clark Street, Chicago, Ill.
Bell, I. A., from 389 Elm Street to 187 N. Akard, Dallas, Texas.
Burkhart, J. R., from Ft. Madison, Ia., to 526 20th Street, Rock Island, Ill.
Condon, A. S., from Ogden City, Utah, to Fort Bayard, New Mexico.
Collins, T. S., from Keokuk to Ryan, Iowa
Clements, G. E., from Chicago, Ill., to Crawfordsville, Ind.
Campbell, J. G., from St. Luke's Hospital, to 507 Lexington Avenue, Chicago.
Chapman, R. M., from 417 Walnut Street, to 510 Walnut Street, Des Moines, Iowa.
Canill, L. L., from Chicago, Ill., to Elizabethlawn, New Mexico.
Cohee, W. H., from Burnsville, to Elizabethtown, Ind.
Cavenaugh, J., from Omaha, Neb., to St. Paul, Kan.
Canfield, B. V., from 325 Virginia Avenue to 525 Virginia Avenue, Indianapolis, Ind.
Dunlap, F., from Bloomington, Ill., to Danville, Ind.
Evans, W. A., from 116 43d Street, to 103 State Street, Chicago, Ill.
Fehr, H., from Milwaukee, Wis., to Augustana Hospital, Chicago, Ill.
Greensfelder, from 3500 Ellis Avenue, to 2512 Michigan Avenue,, Chicago, Ill.
Haynes, H. A., from Estherville, Iowa, to Harvey, Ill.
Hudkins, B. L., from Richmond, to Overfield, Va.
Hoff, F., from 58 Walnut to 510 Walnut Street, Des Moines, Iowa.
Hengst, D. A., from 1005 Park Bld'g., to Home Bld'g., Pittsburg, Pa.
Hull, A. R., from Chicago, Ill., to Sanitorium Waldheim, Oconomowoc, Wis.
Holman, J. H., from Columbia to Hartford, Mo.
Jacobson, F. F., from 150 Orange Street to 306 Perry Street, Cleveland, Ohio.
Jones, R. L., from Nashville, Tenn., to 433½ Austin Avenue, Waco, Texas.
Laugher, C., from 7137 Langley Avenue to 7107 Langley Avenue, Chicago, Ill.
Little, J. A., from Chicago, Ill., to Logansport, Ind.
Meany, J. E., from Reedsville to Manitowoc, Wis.
Maxwell, C. S., from Richmond, Va., to Mount Olive, N. C.
McCurdy, S. L., from 1620 Park Bld'g., to Home Bld'g., Pittsburg, Pa.
Moellir, T. O. E., from Thief River Falls, Minn., to Hillsboro, N. D.
Ornet, A. L., from Des Moines, Iowa, to Hiteman, Iowa.
Patterson, M. F., from 506 Walnut Street to 600 Walnut Street, Des Moines, Iowa.
Potter, L. C., from 331 W 28th Street to 142 E. 85d Street, New York.
Spenzer, J. G., from 370 Central Avenue to 341½ Prospect Street, Cleveland, Ohio.
Toliaferro, V. H., from Atlanta to Eatonton, Ga.
Williams, R. F., from Richmond to Warm Springs, Va.
Williams, R. E., from Richmond to Hampton, Va.
Westervelt, J., from Housic Drug Store to 213 Main Street, Dallas, Texas.

### LETTERS RECEIVED.

Ashby, A. A., Red Oak, Iowa.
Brown, E. V., Hebron, Ill.; Branch, G. H., Grand Isle, Vt.
Crane, A. M., Marion, Ohio; Cutter, J. A., New York, N. Y.; Cokenower, J. W., Des Moines, Iowa; Cotton, L., Detroit, Mich.
Denison, C., Denver, Colo.; Dowling, Francis, Cincinnati, Ohio; de Schweinitz, E. A., Washington, D. C.; Dunn, I. J., Erie, Pa.
Egan, J. A., Springfield, Ill.; Engman, M. F., St. Louis, Mo.
Fox, J. F., New Philadelphia, Ohio; Fries, Bros., New York, N. Y.
Grant, T. P., Louisville, Ky.; Gibbs, A. L., New York, N. Y.
Hummel, A. L., Advertising Agency, New York, N. Y.; Hektoen, L., Chicago, Ill.; Herrick, A. B., Santa Rosa, Calif.; Hance Bros. & White, Philadelphia, Pa.
Johnson, C. H., Grand Rapids, Mich.; Jackson, S. B., Pittsburg, Pa.; Jewett, J. H., Canandaigua, N. Y.
Lewis, B. S., Camden, N. J.; Larew, John T., St. Louis, Mo.
Marting, W. F., Trenton, Ohio; Milwaukee Sentinel, Milwaukee, Wis.; McKinnon, C. L., Pittsburg, Pa.; McQuistion, L., Fort Sheridan, Ill.; McFarland, D. W., Stamford, Conn.
Ohmah, E. S., Columbus, Ohio.
Parke, Davis & Co., Detroit, Mich.; Pneumachemie Co., Cincinnati, Ohio.
Richards, F. A., Whitewood, S. D.; Reynolds, H. D., New York, N. Y.; Rogers, Jno. Jr., New York, N. Y.
Schering & Glatz, New York, N. Y.; Smith, Kline & French Co., Philadelphia, Pa.; Sharpe & Dohme, New York, N. Y.; Smart, Chas., Washington, D. C.
Telegraph Publishing Co., Nashua, N. H.; The Insurance Times, New York, N. Y.; Tuley, Henry E., Louisville, Ky.
Wilbur, C. T., Kalamazoo, Mich.

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Yellow Fever, Prevention of, and the Quarantining of Houses to Stamp It Out. By Stanford E. Chaillé, New Orleans, La. Reprinted from N. O. Med. and Surg. Jour.

## THE PUBLIC SERVICE.

**Army Changes.** Official List of Changes in the Stations and duties of officers serving in the Medical Department, U. S. Army, from May 28 to June 3, 1898.

Acting Asst. Surgeons Francis M. C. Usher and E. A. De Lipesey, U. S. A., will proceed to Key West, Fla., and report in person to Major William R. Hall, surgeon in charge of the general hospital at that place, for duty.

Acting Asst. Surgeon C. L. G. Anderson, U. S. A., will proceed from Hagerstown, Md., to Newport News, Va., and report for duty with Light Batteries A and C, Pennsylvania Volunteers.

Acting Asst. Surgeon Burke L. Johnson, U. S. A., will proceed from Kenton, Ohio, to Ft. Thomas, Ky., and report for duty in the general hospital at that place.

Acting Asst. Surgeon Walter Whitney, U. S. A., will proceed from Chicago, Ill., and report in person to the commanding officer, Ft. Sheridan, Ill., for duty at that post.

Major George H. Torney, Surgeon, is assigned to duty in command of the hospital ship "Relief."

Acting Asst. Surgeon S. Melville Waterhouse, U. S. A., is relieved from duty as Ft. Hamilton, N. Y., and ordered to Ft. Myer, Va., for duty in general hospital at that place.

Major Robert H. White, Surgeon, order assigning him to duty with the Philippine expedition is revoked.

Major Louis W. Crampton, Surgeon, will proceed to Tampa, Fla., and report for duty to Major-General William R. Shafter, U. S. Vols., commanding the Fifth Army Corps.

Major Valery Havard, Surgeon, will proceed to Tampa, Fla., and report in person to Major-General Joseph Wheeler, U. S. Vols., commanding the cavalry division at that place, for assignment to duty as chief surgeon.

Acting Asst. Surgeons A. R. Booth, Josepth A. Tabor and T. S. Dabney, U. S. A., are relieved from duty at New Orleans, La., and ordered to Tampa, Fla., for duty with U. S. troops at that place.

Acting Asst. Surgeon Robert E. Williams, U. S. A., will proceed from San Francisco, Cal., to Angel Island, Cal., and report for duty; he will also render medical attendance to the garrison at Ft. Baker, Cal.

Acting Asst. Surgeon W. Hoepfner Wiuterberg, U. S. A., will proceed to Alcatraz Island, Cal., and report for duty.

Acting Asst. Surgeon John B. Darling, U. S. A., will proceed from St. Paul to Ft. Snelling, Minn., and report for duty.

Capt. William P. Kendall, Asst. Surgeon, is relieved from duty at Ft. Brown, Texas, and ordered for duty with Ninth Cavalry in the field at Tampa, Fla.

Capt. Henry A. Shaw, Asst. Surgeon, is relieved from duty at the brigade hospital in the field at Tampa, Fla., and ordered for duty in general hospital, Key West, Fla.

Acting Asst. Surgeon A. H. Mann, U. S. A., will proceed from Springfield, Ill., to Key West, Fla., and report for duty in general hospital at that place.

Acting Asst. Surgeon Ezequiel de la Calle, U. S. A., will proceed from Washington, D. C., to Tampa, Fla., and report to the commanding General Seventh Army Corps for assignment to duty.

Major Phillip F. Harvey, Surgeon, will proceed to Tampa, Fla., and report in person to Major-General William R. Shafter, commanding the Fifth Army Corps, for assignment to duty as chief surgeon of one of the divisions of that corps.

Capt. John L. Phillips, Asst. Surgeon, is relieved from duty at Ft. Walla Walla, Washington, and ordered to Alcatraz Island, Cal.

Capt. Thomas U. Raymond, Asst. Surgeon is relieved from duty at Ft. Canby, Washington, and assigned to duty with the expedition to the Philippine Islands.